

Economic welfare of Bengal is inextricably bound up with the fortune and behaviour of her mighty river systems—the Ganges, the Brahmaputra and the Meghna. In any planning for building up prosperity in the countryside, the fundamental problem of the wholesale deterioration in our rivers, their distributaries and the spill-channels cannot be ignored.

In presenting this view-point in his collection of essays and writings, the author has drawn largely on his wide experiences in the public life of Bengal for well over quarter of a century as also his experiences as a Minister for irrigation, Government of Bengal during 1937-40.

The emergence of two separate foreign states within the geographical boundaries of Bengal has recently added a complication to the problem of tackling the Bengal rivers. But as the author points out, “rivers after all are no respecters of political boundaries or barriers, and sheer forces of nature may compel both the Pakistan and the Indian units of geographical Bengal to join their hands together in evolving a common river policy”.

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Class No...33C.....

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BENGAL RIVERS

AND

OUR ECONOMIC WELFARE

BY

SHRI SRISCHANDRA NANDY, M.A., M.L.A.
Maharaja of Cossimbazar.
Ex-Minister, Irrigation, Government of Bengal.

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To

H. E. SHRI CHAKRAVARTY RAJAGOPALACHARI
First Governor-General of Free India

Who

*As Governor of West Bengal
took lively interest
in the welfare of the Province*

*This monograph
is Dedicated as a Token of
Profound Esteem & Affection*

PREFACE

This brochure includes some of my contributions to the Press and Platform on the problem of our rivers and the allied subject of stepping up food production. Within recent years there has been too much focussing of attention on the short term measures for augmenting our food-supplies, and there is a tendency to relegate the fundamental economic programme of river control and irrigation to a secondary place.

As a member of the Bengal Legislature for near about quarter of a century and a member of the first Bengal Cabinet under the Government of India Act, 1935, I had the privilege of acquainting myself rather intimately with the main features of Government policy in the past in this regard, and the usual pitfalls we have been stumbled into for failing to take into serious account the fundamental problem of the deterioration of river systems. The only excuse therefore that I can put forth for publishing this brochure in the present form is that it may stimulate some thinking amongst us about how best to tackle the major economic problems besetting our countryside today.

I have all along supported the view that the scheme of a barrage across the Ganges is perhaps the only effective means to induce a copious supply of fresh up-land water down through the Bhagirathi, the Hooghly and other dead and dying spill-channels in Central Bengal. This indeed is the surest way not only to put new life into our moribund countryside, but also to maintain the efficiency of the Port of Calcutta which has assumed a vital significance to us after the partition of Bengal. I am therefore glad to note that the Government of West Bengal has realised the importance of the same and taken up the matter in right earnest recently.

Some of these writings were published on the background of what is now called "undivided Bengal". Even though important areas thereof now form part of a separate foreign state, the essential fact of the geographical unity of Bengal can never be done away with, however much human frailties may wish or work to the contrary. As I

said elsewhere in one of my writings, rivers after all are no respecters of political boundaries or barriers ; and sheer forces of nature may compel both the Pakistan and Indian units of geographical Bengal to join their hands together in evolving a common river policy.

That date is probably not too distant, as there is practically no other way for building up plenty and prosperity in the countryside.

Cossimbazar House,
Calcutta.
April 14, 1948.

S. C. NANDY.

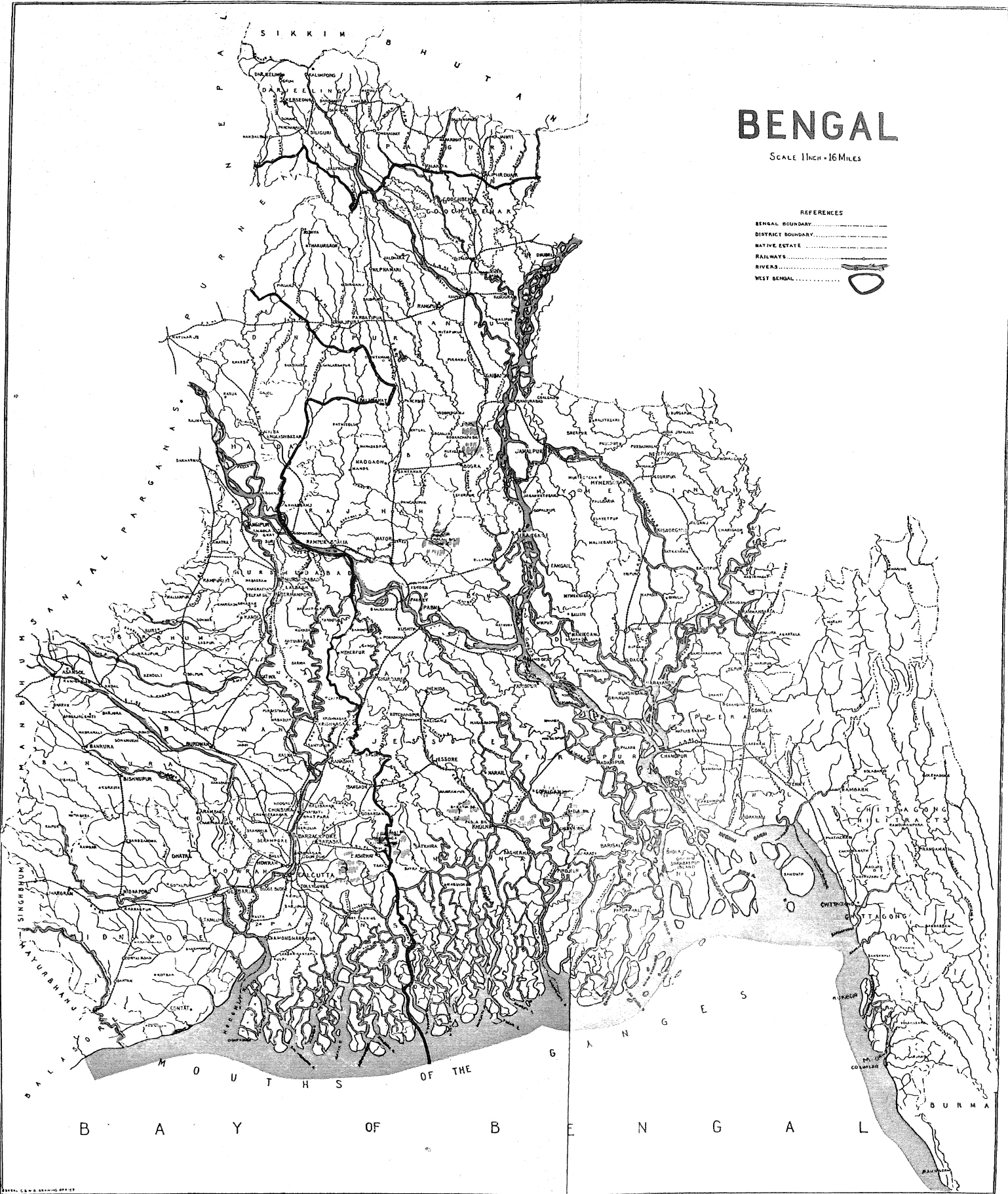
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BENGAL

Scale 1 inch = 16 Miles

- REFERENCES
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B A Y OF B E N G A L

CHAPTER I

BENGAL RIVERS AND OUR ECONOMIC WELFARE

I thank you for your kind invitation asking me to speak on the important subject of Bengal rivers. It is indeed significant that you have thought fit to link the two subjects of River Problems and Economic Welfare, as it is only on their bearings on the vital economic and social problems that the River Problems in Bengal have their importance and significance. The Bengal delta is a gift of her mighty river systems—notably the Ganges, the Brahmaputra and the Meghna ; they constitute important means of communication, for the transport of goods as well as men ; as the natural drainage channels of the country our rivers form a vital factor in the problem of public health ; and lastly, there are the life-giving and fertilising properties of the silt-laden river water, having their beneficial effect on agricultural prosperity. Important trends of population changes occurred during the last few centuries as a result of diversion in the courses of rivers and the consequent deterioration of certain parts of Bengal and development of certain other areas. Areas of high population densities a century ago in Western Bengal, for example, degenerated into areas of extremely low population density ; whereas old undeveloped lands in the New Alluvium and along the banks of the Meghna, have shown within comparatively recent times the highest population density in the world. Then again there is the rise and decline in the growth of towns, so vitally linked with the activity or otherwise of the river system. As a matter of fact, to any serious student of our economic and social history the important bearing of riverine development on our wealth and welfare should form a fascinating study.

I do not propose to delve deep into the past ; nor does

Paper read at the Asutosh Hall, Calcutta University, Calcutta, on Monday, 6th February, 1939 under the auspices of the Bengal Economic Society.

it lie within my competence, layman as I am, to deal with all the intricate engineering details connected with our mighty river problems. I should however rest content with merely indicating before you the broad outlines of the river problems that face us today in Bengal and the lines in which we propose to tackle the same and the essential preliminaries that are necessary before we decide to launch a comprehensive policy, attacking the problem on all the fronts, engineering and financial, simultaneously. For those of you who feel more interested in the subject, I should ask them to go through the excellent monograph on *River Problems of Bengal* which formed the subject matter of an address by Mr. S. C. Majumdar, Chief Engineer, Bengal, before the Indian Science Congress at Calcutta last year. I have no doubt that many of you have already gone through the same.

Before we take up the subject, it may be useful for us to refresh our memory by a glance at the map of Bengal. In Western Bengal (districts of Birbhum, Bankura, Burdwan, Midnapore and the western portion of Hooghly and Howrah districts), there are the torrential rivers like the Damodar, the Ajay, the More, the Dwarakeswar, the Cossye, etc., originating from the low hills of Chhotanagpur and the Santhal-Parganas Hills. In Central Bengal (eastern portion of Hooghly and Howrah districts, the districts of Murshidabad, Nadia, Jessore, 24-Parganas, Khulna, and the southern districts of the Dacca Division) there are the spill channels of the Ganges, viz. the Bhagirathi, Mathabhanga, Jalangi, the Bhairab, and numerous other distributory channels showing signs of deterioration as a result of the Ganges taking an easterly course along the Padma. In Northern Bengal and the northern districts of Dacca Division there are the Teesta, Brahmaputra-Jumna and the Meghna systems. Rivers like the Punarbhaba, the Atreyi and the Karatoya show signs of deterioration as a result of the diversion of the Teesta towards the Brahmaputra-Jumna. In the Mymensingh district the Brahmaputra has changed its old river-bed and joined the Jumna. The Meghna system is at present active in its full vigour and no broad change of river course has yet been brought to the surface. It would do well for us to remember these broad territorial divisions, as each area has got its own special problem and requires to be handled independently of each other.

WESTERN BENGAL—A RETROSPECT

The problems of Western Bengal come into prominent relief if we refer to past prosperity of the area, so eloquently narrated by foreign travellers. Bernier remarked in the middle of the 17th century:

“The knowledge I have acquired of Bengal in two visits inclines me to believe that it is richer than Egypt. It exports in abundance cotton and silks, rice, sugar and butter. It produces amply for its own consumption wheat, vegetables, grains, fowls, ducks and geese. It has immense herds of pigs and flocks of sheep and goats. Fish of every kind it has in profusion. From Rajmahal to the sea is an endless number of canals, cut in by-gone ages from the Ganges by immense labour for navigation and irrigation while the Indian considers the Ganges water as the best in the world.”

Even as late as 1815 Hamilton wrote of Hooghly, Howrah and Burdwan as follows:

“In productive agricultural value in proportion to its size in the whole of Hindusthan, Burdwan claims the first rank and Tanjore second.”

I ask you to compare and contrast this bright picture with the famous report of Dr. Bentley on *Malaria and Agriculture in Bengal* published only a few years ago. Instead of this “granary of the East”, we find Dr. Bentley unfolding a pathetic story of impoverishment of the soil, diminution of harvests and a heavy toll of malaria and there has been, in addition, a serious accumulation of silt and sand in the beds of many of the rivers to such an extent that they ceased to be active streams.

PRINCIPLE OF OVERFLOW IRRIGATION

The present moribund condition of the area is indeed too distressing to bear repetition. Popular opinion as well as the opinion of the experts agree with the theory that the gradual deterioration of the river systems is the principal, if not the only, cause of this unfortunate development. The problem therefore that presents itself before us is how to put fresh life into the streams that have been once active in these regions and bring health and prosperity to the millions. In this connection it may not be out of place to refer to the illuminating Readership Lectures delivered at this University

by the late Sir William Willcocks in 1930, and the tremendous public interest aroused by the same.

Relying on the statement of Bernier about the existence of an endless number of canals in Western Bengal, Sir William remarked that the early Bengal Kings thought out and put into practice a system of Overflow Irrigation of the Ganges and the Damodar delta, "which ensured health and wealth to Bengal for very many hundreds of years", and that it was the eventual neglect of these artificial canals which ultimately brought ruin to the area. "Every canal which went southwards, whether it has become a river like the Bhagirathi, or remained a canal like the Mathabhanga, was originally a canal. They were lined out and dug fairly parallel to each other. They were spaced apart and placed just about the distance apart that canals should be placed . . . the long continued parallel alignments of the main canals can be readily seen by a practised eye. They are very different to the tangled, meaningless mass of waterways which are to be seen south-east of Faridpur, where we have nature's undirected handiwork. The Mathabhanga is the true ridge of the country, and from it were led off so many canals that the Mathabhanga itself dwindled in size as it continued its course, and hence its name of "Mathabhanga" or "broken-headed".*

Expert opinions differ as to whether the late Sir William Willcocks was strictly correct in laying this extraordinary emphasis on the existence of a system of well-aligned and well-spaced artificial canals along the deltas of the Ganges and the Damodar. There is also a rival theory in the matter, challenging the existence of artificial canals. Whatever be the merits of the rival sides in the controversy, laymen like us feel that the issue is long dead and that it should be our endeavour to confine our attention to the present and devise effective ways of solving the problem as it presents itself before us today. Of more practical interest to us is the principle of "Overflow Irrigation" enunciated by Sir William Willcocks— " . . . to mingle in the fields of standing rice, the fertilising and health-giving waters of the rivers in flood with the poor water of the monsoon rainfall "

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\**Ancient System of Irrigation in Bengal*, pp. 10-11.

by means of a system of artificial canals. It has to be admitted that in emphasising this special irrigation need of Bengal—the land of mighty rivers and copious rainfall—Sir William rendered yeoman's service to the future of all our irrigation schemes. The principle was of course not new as Dr. Bentley had already mooted the idea of introducing Flush Irrigation into certain areas of Western Bengal in his famous report of 1925 ; we have gradually realised the soundness of the principle.

#### HOOGHLY-HOWRAH FLOOD-FLUSHING SCHEMES

As an instance that this principle of Overflow or Flush irrigation has been accepted by the Government recently, I may cite before you the adoption of the Hooghly-Howrah flood-flushing scheme with a view to irrigate three districts at an estimated expenditure of over Rs. 2½ crores. The area covered by this irrigation project is about 3,50,000 acres in Burdwan, Hooghly and Howrah districts and we are considering to introduce the same after certain preliminaries, specially the financial aspects are settled. There are two other important projects in this region—the Dwarakeswar Reservoir project to irrigate about 2,00,000 acres in Bankura and Burdwan districts, and the More Reservoir project to irrigate about 4,32,000 acres in Birbhum and Murshidabad districts. The areas covered by all these three projects were selected mainly on the ground of comparatively short monsoon and erratic distribution of rainfall. The novel feature of these schemes is the provision of storage reservoir which by ensuring supply of water during the dry season will enable the cultivator to grow more than one crop. In Western Bengal, the rivers are mainly torrential ; and a well-designed canal system will ensure good harvest in years of normal rainfall and offer an insurance against famine in years of drought.

#### POLICY OF EMBANKMENTS

But the most serious problem in Western Bengal is that presented by the embankments along the Damodar, Ajay, and other rivers which were undertaken rather indiscriminately, cutting the river spill and as a result, causing deterioration

in the fertility and sanitary condition of large tracts of country. The department at present maintains altogether some 1,500 miles of embankments, firstly, to act as protective measures in certain districts against river floods, and secondly, to exclude salt water and tidal waves from land situated in the estuaries or on the sea face. Most of these embankments are situated in Burdwan, Hooghly, Midnapore and 24-Parganas, as also in Nadia, Murshidabad, the north bank of the Ganges and in Tipperah. Taking in view the interest of the very lands which are thus protected and the ultimate interests of the region thus embanked, the embankment policy of the Government was considered by experts to be defective and naturally we have adopted the policy of giving up the embankments gradually. But here again the problem is extremely complicated by the existence of wide vested interests and it is desirable that we should proceed cautiously avoiding hardships as far as practicable. Perhaps, the most practical approach to this intriguing question would be to retain the embankments and at the same time minimise their baneful influence by taking steps to flush the embanked areas regularly by silt-laden water drawn through the controlled escapes. In the tidal areas of course, no compromise of this nature is possible, and in order to save the areas from the fate of remaining for ever as perennial waterlogged marshes we shall have to demolish the embankments altogether in the long run.

#### CENTRAL BENGAL—A GANGES BARRAGE

The problem of dead and dying rivers is most acute in Murshidabad, Nadia, Jessore, 24-Parganas and Khulna districts—the continuous deterioration of the spill channels of the Ganges, or “artificial canals” as Sir William Willcocks would put it, such as the Bhagirathi, Mathabhanga, Jalangi, Bhairab and other rivers. This deterioration has been caused by changes in the course of the Ganges and its eastward march along the Padma towards Meghna and the Brahmaputra. As an effective means of reviving these spill channels and ensuring flood or overflow irrigation of Central Bengal, Sir William Willcocks made the most important suggestion of having an “Egyptian Barrage on the Ganges at a point about 14 miles below the Baral Head”. This

barrage would be so designed as to induce a portion of the Ganges flood to pass through the Jalangi and the Mathabhangha and their numerous branches with a syphon under the Garai for Faridpur, and at the same time ensure a steady supply of water all the year round in the Bhagirathi and the Hooghly. All experts agree that this is an ideal solution for all the problems of riverine improvement in the Ganges delta and cannot perhaps be improved upon as a counsel of perfection. Sir William himself gives us an estimate of £12,000,000 for the Barrage "with its training works complete". In the present condition of the finances of Bengal it may not be feasible for us to go in for so expensive a scheme. Sir John Anderson significantly pointed out a few years ago that the Barrage Scheme however satisfactory as an ideal solution "cannot be considered at the present time for financial reasons".

#### BARRAGE EFFECTS OF THE BRAHMAPUTRA FLOODS AND THE HARDINGE BRIDGE

For the time being therefore we shall have to consider less ambitious schemes which can be taken up more expeditiously and are expected to improve immediately the rivers of Central and Western Bengal. Bengal river engineers have already noticed that certain natural causes are in operation giving a chance of revival to the Nadia rivers by inducing a portion of the flood of the Ganges to flow through them. One of them is the barrage effect of the Brahmaputra flood which meets the Ganges just above Goalundo and holds back the Ganges flood to seek some other outlets higher up. The Gorai, for example, which was a minor channel in Rennel's map has been considerably developed within recent times. Another factor of this nature is reported by some to be the Hardinge Bridge, tending to cause an afflux in the Ganges and improve the spill channels higher up.

"The huge Char which hitherto masked the off-take of the Mathabhangha," writes Mr. S. C. Mazumdar in his *River Problems of Bengal*, "has practically disappeared and its position in relation to the Ganges is definitely improving. The off-takes of the other two principal spill-channels in Central Bengal, viz. the Jalangi and the Bhagirathi are also showing signs of improvement though not to the same extent

as in the case of Mathabhanga." Assuming this tendency of the Ganges flood, which was reported to be very marked during the floods this year, it becomes a feasible proposition to introduce flood-flushing in Central Bengal by resuscitating the spill channels of the Ganges. If for example the Mathabhanga and the Jalangi are re-opened at their heads, their carrying capacity improved and adequate provision is made for distributory channels of proper capacity with facilities for spill over the country side, we may be able to utilise fully the recent tendency of the diversion of the Ganges flood for not only preserving the old spill channels but also restoring lost health and prosperity to Central Bengal.

We have already taken important steps in this direction. Firstly, we have taken up a contour survey of the decadent tracts in Central Bengal at an estimated cost of Rs. 1,33,571 with the object of collecting the essential data required for flushing schemes to be prepared and introduced. Secondly, certain concrete projects have already been launched; the scheme for the resuscitation of the Bhairab river in Jessore for example at an estimated cost of Rs. 2,17,000 has only recently been taken up, of which I had the privilege of cutting the first sod the other day. On that occasion, I remarked that "the scheme for the resuscitation of the Bhairab should be viewed on the background of a much wider setting, forming as it does an important link in the chain of schemes for the resuscitation of dead and dying rivers of Bengal". I hope, we shall be able to give a concrete shape to this statement of policy after the contour survey of Central Bengal is completed.

#### CO-OPERATION WITH LOCAL BODIES AND SMALLER IRRIGATION SCHEMES

There are as a matter of fact a number of smaller schemes which may be taken up expeditiously for the immediate interests of the localities concerned. The co-operation of District Boards and Union Panchayets in this respect is necessary, and proved extremely valuable in the past. Resuscitation of the Bhairab itself has been possible to undertake because the District Board and the Municipality of Jessore agreed to co-operate and shoulder their proportionate shares of the estimated cost. In the common fight

against the jungle, morass and the mosquito, there had also been valuable co-ordination of work between the Public Health and the Irrigation Departments and the Anti-Malarial Societies in the districts of Burdwan and Nadia. In carrying out the "Ghuzaavi" and "Bejoy" cuts, designed to bring out the flood water of the Mathabhanga into the Nabaganga and Kabodak and thus improve the sanitary conditions of a large area in the districts of Jessore and Nadia, there had been a close co-operation of the Nadia and Jessore District Boards and the Irrigation Department. There is also another instance in Murshidabad, when the Gobra Nala was resuscitated by means of a cut connecting it with Kalkali river which takes off from the Ganges at Lalgolaghat. This cut cost Rs. 3½ lacs and was successful in removing malaria and increasing fertility by means of flush irrigation. There are also a number of similar instances of local enterprise, and encouraged by results, necessary instructions were issued by myself, after assuming charge as a Minister, to local bodies to submit their schemes of purely local interests to the Government through the Collector of the district. In this way valuable materials as regards local schemes of flush irrigation and drainage have been collected. There may be quite a good number of these schemes which need not adversely affect any of the existing waterways or run counter to the formulation of a comprehensive irrigation policy, and may be taken up to meet a pressing local demand. These schemes are at present being examined by a special officer and it is expected that a number of them will be taken up in the near future.

#### NORTHERN BENGAL—A TEESTA BARRAGE

In Northern Bengal the diversion of the Teesta towards the Brahmaputra and the consequent deterioration of the spill channels of the area, particularly of the Karatoya, the Atreyi and the Punarbhaba spelt disaster for the area served by them. This question of the improvement of rivers in Northern Bengal is therefore vitally linked with the diversion of the Teesta which now practically runs to waste and moreover causes destructive flood in the Jumna. There is the suggestion that the waters of the Teesta might be dammed by means of a barrage near the hills, and drawn

off into a canal striking south-west across the head waters of the Atreyi, Karatoya and the Punarbhava, thus flushing and resuscitating the same. The possibility of this Teesta Barrage have not yet been explored to the full, and it must necessarily wait till complete hydraulic data are available for this area. There is a similar suggestion for reviving the Boral river by leading the Ganges water in flood season. All this must however wait till the contour survey for Northern Bengal, which may be taken up shortly, is completed. I may mention at this stage that no serious study has yet been made by the Department about the special irrigation needs of this area owing to paucity of staff, and in the reorganisation scheme of the Irrigation Department which has been taken up by me recently, there is the provision of a special division for Northern Bengal.

Before I leave this subject of general riverine deterioration, I may refer in passing to two other tracts which also require considerable attention. In North-Western Bengal, there are large areas full of marshes and pools which may require irrigation and flood-flushing from the Mahananda. Another difficulty is provided in North-Eastern Bengal by the Brahmaputra changing its old river bed in the Mymensingh district and taking its course along the Jumna. The proposed reorganisation of the Irrigation Department contains a special division for this area as well.

To arrest the deterioration of the spill channels of the major river systems and restore them to their former activity may entail long years of preparatory contour survey and research in river training ; but nevertheless one can very well share the optimism of the Irrigation Department Committee of 1930. "The country in question is difficult, but the difficulties in question do not appear to be insurmountable."

#### HYDRO-ELECTRIC DEVELOPMENTS— POSSIBILITIES

A matter closely linked with all schemes of river control and irrigation is the possibility as well as the necessity of hydro-electric power development. In the United Provinces, the recent installation of the Ganges Grid scheme has opened up vast possibilities not only for irrigation but also for the general economic outlook of the Province. Development of

cheap power is essential for the growth of village industries on up-to-date lines ; and it makes possible the pumping of water from rivers, low-level canals as well as from tube wells. In Bengal there are areas which cannot be fed by river-silt-water through gravity canals, but where it would be necessary to pump silt water by cheap electric power. This method is also advantageous in areas where any interference with river channels is to be avoided. It is indeed unfortunate that we have not yet tapped the possibility of hydro-electric power development in a serious manner and a vast field in this respect remains unexplored. A scheme of considerable magnitude in this respect is the Teesta Barrage Scheme, which was first mooted as a Hydro-Electric project but later on discarded owing to certain difficulties which proved to be insuperable a decade or so ago. Then again there is the question of the Ganges Barrage project which might eventually materialise. The association of a hydro-electric project with this scheme if found feasible by experts, may revolutionise the entire economic frame-work of Bengal. All these however are in the realm of possibilities and mentioned only because they may give us the necessary inspiration to move forward with vigour and boldness with a comprehensive policy of riverine improvement and control.

The Irrigation Department has under consideration two projects which may have possibilities of hydro-electric development ; these are the More and Dwarakeswar Reservoir projects, two storage dams across the river Mayurakshi at Mossanjore in the Santhal-Parganas, and the Dwarakeswar at Suknivas in Bankura district. These storage irrigation schemes are intended to offer the only solution for growing sugarcane and other *rabi* crops in the area by offering artificial irrigation when there is no rainfall or river water ; they may also make possible the development of hydro-electric works.

#### INTER-PROVINCIAL RIVER COMMISSION

A peculiar problem has arisen in Bengal due to the utilisation of the upland water of the Ganges in the canal schemes of U. P. and Bihar and extensive deforestation in the catchment basin. It is not clear to what extent the flood problem or the problem of deterioration of the spill channels of



the Ganges in Bengal has been aggravated as a result. There cannot, however, be any manner of doubt that the stakes of Bengal in this matter are very great and that any further project of irrigation, or deforestation must not be considered in the up-river areas without consulting the interests of Bengal. The Government of India Act indeed contains provisions under sections 130 to 134 empowering the Governor-General to retain the ultimate powers of adjudication in cases of dispute ; but the principle of provincial autonomy precluded the framers of the Act from incorporating provisions to make the initiation of irrigation policy on an inter-provincial basis possible. When it is realised that a river like the Ganges, passing through a number of provinces and states, forms with its tributaries and branches an integral system, it appears reasonable to expect that there should be some sort of inter-provincial machinery where the Governments concerned are adequately represented to make co-ordination of policy possible. The recent floods made the situation rather acute and at the instance of the Chief Engineer, Bengal, the Central Board of Irrigation passed an important resolution in this regard. In the Conference of experts which was held by me at Calcutta in July last year, a definite recommendation was made for the formation of a River Commission on an inter-provincial basis. It is also perhaps fresh in public memory that in January this year an inter-provincial flood conference was held at Lucknow where the three provinces of Bengal, Bihar and U. P. participated and it was decided to set up a Ganges River Commission to deal with all questions concerning conservancy of the Ganges river basin. The object of this Commission will obviously be to co-ordinate the activities of the provinces lying within the Ganges basin with a view to lower the level of the destructive floods in the Ganges by controlling deforestation and encouraging afforestation as also to control the extraction of the Ganges water during the low water season.

#### THE RECENT FLOODS AND THE ESTABLISHMENT OF A HYDRAULIC RESEARCH STATION IN BENGAL

In my recent Radio talk on " Flood and its Remedies ", I discussed the situation created by the recent floods and

stated that the only effective manner of tackling it on a permanent basis is to restore the spill channels of the Ganges and adopt a comprehensive policy of river training and control. In other words, the flood menace in Bengal is but another aspect of the main problem of the resuscitation of dead and dying rivers. The conference of experts at Calcutta particularly stressed the need for having a hydraulic research laboratory with a view to study the special problems of river training and erosion in Bengal. Accompanied by the Chief Engineer, I visited the Lahore Hydraulic Research Station and River Training Laboratory in the Punjab to study its working at first hand and was greatly impressed by the systematic manner in which the scientific researches and experiments were carried out there. I congratulate the Government of the Punjab in the fruitful way in which the results are being utilised in evolving an intelligent irrigation policy for the Punjab, turning barren and unproductive areas into a veritable garden, healthy and prosperous. For a province like Bengal, full of rivers now dried up and dead, the value of such an hydraulic research institute cannot perhaps be overstated. It is also a vital necessity for the neighbouring provinces of Eastern India and I am glad to say that some neighbouring provinces are taking interests in the matter and encouraging me to have an institute for Eastern India. Let us hope that in the very near future we shall be able to make a good beginning in this direction, and thus make the future irrigation policy of the province well and firmly based on the solid rock of scientific researches and experiments.

#### IRRIGATION FINANCE

Any discussion on the irrigation problems of Bengal will be rather incomplete unless the supreme question of finance is also touched upon, and I propose to deal with the same in an outline form as briefly as possible. It is estimated that a total capital of Rs. 150 crores has been invested in constructing new irrigation channels, building storage dams and repairing old works throughout India up till now. About 30 million acres of land are being irrigated in India by means of these artificial canals which total some 40,000 miles in length. Of these 22 million acres are officially classed as "productive" and the rest 8 millions as "unproductive".

# FINANCIAL RESULTS OF MAJOR IRRIGATION WORKS TO END OF 1936-37

Percentage of net revenue on capital invested. (Col. 6 on 3).

Works.

|                                | (1)<br>Rs.                              | (2)<br>Rs.                                                      | (3)<br>Rs.                                              | (4)<br>Rs.                           | (5)<br>Rs.                       | (6)<br>Rs.                                   | (7)<br>Rs.                                          | (8)<br>Rs.                                          | (9)<br>Rs.                                        | (10)<br>Rs.                                          |
|--------------------------------|-----------------------------------------|-----------------------------------------------------------------|---------------------------------------------------------|--------------------------------------|----------------------------------|----------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|------------------------------------------------------|
|                                | Total capital outlay to end of 1936-37. | Total accumulated arrears of simple interest to end of 1936-37. | Total capital invested to end of 1936-37 (Cols. 1 & 2). | Total gross receipts during 1936-37. | Working expenses during 1936-37. | Net revenue during 1936-37 (Col. 4 minus 5). | Percentage of net revenue on capital (Col. 6 on 1). | Simple interest on capital invested during 1936-37. | Net gain or loss during 1936-37 (Col. 8 minus 9). |                                                      |
| Damodar Canal ...              | 1,19,05,919                             | 14,94,294                                                       | 1,34,00,213                                             | 4,92,820                             | 2,75,529                         | 2,17,291                                     | 1.8                                                 | 5,68,109                                            | -3,50,818                                         | Deficit in 1934-35 { 2.11 in 1935-36 1.6 in 1936-37  |
| Bakreswar Irrigation Canal ... | 7,13,875                                | 2,41,295                                                        | 9,55,170                                                | 18,810                               | 13,753                           | 5,057                                        | 0.7                                                 | 35,089                                              | -30,032                                           | Deficit in 1934-35 { 0.57 in 1935-36 0.34 in 1936-37 |
| Midnapore Canal ...            | 84,92,053                               | 1,86,03,344                                                     | 2,70,95,397                                             | 1,25,832                             | 1,27,315                         | 1,482                                        | Deficit 2,76,175                                    | -2,77,658                                           |                                                   | Deficit in 1934-35 { Do. in 1935-36 Do. in 1936-37   |
| <b>TOTAL IRRIGATION</b> ...    | <b>2,11,11,847</b>                      | <b>2,03,38,933</b>                                              | <b>4,14,50,780</b>                                      | <b>6,37,462</b>                      | <b>4,16,597</b>                  | <b>2,23,830</b>                              | <b>1.0</b>                                          | <b>8,79,373</b>                                     | <b>-6,58,508</b>                                  |                                                      |

Constrasted with these figures, the position in Bengal is rather disappointing, the total area irrigated in 1933-34 for example being only 48035 acres and total capital outlay not much over Rs. 2 crores. The details of total outlay in irrigation undertakings and the percentage return on them are included in the statement below. I think, I need not elaborate them as they tell their own tale. I may add that the financial results of navigation canals present far worse a picture and have not been included in the statement being not necessary for our present purpose.

A salient feature that comes out of these interesting figures and which requires special mention is the fact that irrigation development in Bengal had been very meagre up till now. As a matter of fact the Hopkyns Committee of 1930 had to admit that "most of the province, viewed as a field for the extension of irrigation, is at present an unknown land to the department". There had undoubtedly been difficulties ahead—lack of experienced delta engineers, inadequacy of staff in the department, merciless application of the axe of retrenchment with the mistaken idea that irrigation in Bengal was a redundant function, and lack of sufficient data as regards river conditions and control. With so many handicaps in the field, there was moreover the pessimistic outlook of "unproductiveness" of the existing irrigation undertakings. Major irrigation projects are to be financed out of loans ; but it would not at all be prudent to take up big loan programmes without assuring ourselves at the outset that the projects that are going to be so financed would be able to repay the money advanced.

The voluntary basis of the old Irrigation Act making it optional to use canal water did not work satisfactorily in Bengal, as when rains were plentiful people simply dispensed with the use of the canal water and as a result the canal revenue realised proved to be extremely insufficient. It had therefore been realised that if the financial working of major irrigation projects was to be satisfactory, we must change the voluntary basis of the canal rates without at the same time inflicting any real hardship on the users of canal water themselves. The Bengal Development Act was devised to solve this intricate problem of irrigation finance in the special circumstances of Bengal. The ideal principle of imposing a canal levy, as suggested by the Indian

Taxation Enquiry Committee of 1925, is to assess the same at a "moderate share of the value of water to the cultivator". The increased earning power as a result of the irrigation canal constitutes this "value of water" to the cultivator. What the Bengal Development Act did was to accept this ideal principle of canal taxation and empower the Government to impose a levy up to a maximum of 50% of the difference between the post-canal and pre-canal yields. The financial scheme thus evolved is not likely to inflict much hardship on the cultivators as it taxes what is termed an "unearned increment" accruing to him as a result of the canal. At the same time it is best calculated to put all major irrigation projects on a sound financial footing and make the securing of "productive loans" possible.

#### CANAL RATE CONTROVERSY IN THE DAMODAR AREA

An unfortunate off-shoot of the operation of the Bengal Development Act is the Damodar Canal Rates controversy. The procedure adopted by the previous Government in this regard might be defective, and rightly or wrongly the enforcement of the Development Act in the Damodar Canal area provided a fertile ground for unpleasantness. I must confess that the difficulties experienced in bringing into operation the first experiment under the Bengal Development Act were unfortunate, as this undoubtedly acted as considerable setback to other schemes under contemplation. I submit that the principles of the Development Act are altogether non-controversial and all of us should co-operate whole-heartedly to make its working successful.

As regards irrigation finance I have so far confined myself to the major projects which might require the floatation of big loans. There are a number of smaller schemes which are being met out of current revenues. But obviously the resources of the Government are not unlimited in this respect and there is the necessity of co-operation of the local bodies and members of the public. I have already cited a number of instances where local bodies have successfully contributed in launching necessary small irrigation projects. There is also a vast field for voluntary co-operation by members of the public—both in men and money. Instances are not rare

where people of a locality combined together under the inspiring leadership of the Collector of the district and successfully excavated a moribund *khal* or reclaimed waterlogged areas. As a matter of fact there is a wide field for this sort of voluntary social service and can really work miracles if properly guided under the expert advice of the Government.

#### CONCLUSION

I think I must now conclude this rather lengthy statement of mine, and thank you for the very patient hearing all of you have so kindly extended to me. The river problems of Bengal are extremely complicated, and this complication has unfortunately deepened due to the past policy of *laissez faire* generally, and defective approach in particular cases. Our Engineers are at work in a subject which requires long years of specialised study and research and the necessary collection of hydraulic data. Then again there is the financial problem as presented by the huge mass of "unproductive" works and the difficulties of having a successful loan programme for major irrigation projects on the face of the pessimistic outlook engendered by them. I think I have been able to explain to you that on both these fronts we have been able to settle the preliminaries of a comprehensive policy and thus provide an optimistic outlook for the future of Bengal.

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## CHAPTER II

### NEED FOR INTER-PROVINCIAL OR INTER- STATE RIVER COMMISSION\*

The inter-provincial aspect of the river problems of Bengal brings into prominent relief one of the most intriguing features which still await solution. Our main river systems pass through several states and provinces. Within recent times, our problems connected with flood or erosion or deterioration of the spill channels of the main rivers have multiplied, and there cannot be any denying the fact that these are to a considerable extent caused by the pursuit of conflicting policies framed to serve purely local or regional interests in the up-river areas.

Taking into consideration the Gangetic system of rivers, we know that there are extensive canal schemes in the upper reaches of the river, notably in the United Provinces. These canal schemes are being energetically pursued for several decades without perhaps taking adequate care of the interests of the areas situated in the lower reaches. The catchment basin of this system is also spread over several provinces and states, where extensive deforestation has been resorted to due to a variety of causes. All these have caused incalculable damage to the lower reaches of this important river system, aggravating the flood menace, reducing the dry-weather flow, complicating the problem of navigation and irrigation and leading to among others a progressive deterioration in the spill and tidal channels and an ever-increasing salinity in the water-supply. We of the down-river areas have of course no intention to question the wisdom of extending the beneficent canal and irrigation schemes in the up-river areas: but it will certainly not be unreasonable to expect that any particular province or state should not be permitted to take an undue advantage of its geographical position or monopolise the use of the river exclusively for its own benefit to the detriment of the interests of others less advantageously situated geographically.

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\* *Modern Review*, April 1944.

## GANGETIC VALLEY

In the matter of irrigation needs, we can easily distinguish between three distinctive sub-regions in the Gangetic Valley—firstly, there is the Upper Ganges Valley with its canal irrigation ; then there is the Middle Valley with its magnificent system of well irrigation, and thirdly, we have the Bengal Delta with its marvellous natural flood irrigation covering a vast alluvial plain. The irrigation interests of all these regions are clearly divergent ; but at the same time it is to the common interest of all that proper and effective measures should be taken for the conservancy of the river system throughout its entire length, that the total available flow passing down the rivers should be more equitably distributed throughout the year, that floods should be kept down within reasonable limits, and lastly that navigability of the rivers should be maintained at least on the basis of the existing lengths. All this is not possible unless there is some co-ordinated effort by an agency independent of purely local or regional interests and which can apply the proper perspective in this matter of river conservation.

It is the adverse geographical situation that compels us in Bengal to raise the voice of protest, as in the past we have been more sinned against in this vital regard than actually sinning. Our interests require that the irrigation or canal schemes in the up-river areas in future should be pursued with the utmost vigilance and care, and can only be permitted with safety as far of course, as the same do not seriously interfere with the natural flood irrigation here. Our agricultural prosperity solely depends on this gift of nature and we know that considerable mischief has already been done by extraction of water-supplies by means of canals in the up-river areas. In Central and Western Bengal, this natural irrigation has been seriously interfered with, as a good many of the spill-channels of the Ganges have been choked to death by this interference with their flow and the increasing silt-burdens resulting therefrom. As a result, we have been tremendously burdened with a declining agriculture, deterioration of natural drainage and aggravation of the public health problems caused by water-logging and malaria. There had no doubt been an under-estimate of the importance of a proper river policy in Bengal in the past: but it is now high time that the mischief must be traced at the source



and effective remedial measures adopted so as to restore the natural flood-irrigation to our once-rich and fertile lands. This means that there must be some inter-provincial machinery which can be entrusted with the task of co-ordinating the irrigation policies of the provinces and states affected, take up effective measures for controlling deforestation and systematically plan out afforestation in the catchment areas, and ensure adequate conservancy measures for the river system as a whole.

#### GANGES RIVER COMMISSION

The experience of other countries is also a good pointer in this direction. The disastrous consequences of treating the river problem in a piece-meal fashion and allowing divergent policies to be followed, compelled the Federal Government of U.S.A. to take up the control of the Mississippi river system by means of an Inter-State Commission. More recently we have the experience of a much more effective control by the constitution of the Tennesy Valley Authority. Advocating the creation of the T.V.A. in his message to the Congress in 1933, President Roosevelt remarked as follows:

“ Many hard lessons have taught us the human waste and results from lack of planning. Here and there a few wise cities and counties have looked ahead and planned. But our Nation has ‘ just grown ’. It is time to extend planning to wider field, in this instance comprehending in one great project many States directly concerned with the basin of one of our greatest rivers ”.

These remarks apply *mutatis mutandis* to the great river systems of India, not merely to cover a good many mistakes of the past but also to look ahead and make a much better use in the future of our land, people and water.

It is really unfortunate that much water has been allowed to flow down our rivers before any serious attempt could be made in this regard. The geographical position of Bengal is adverse, both in respect of the Gangetic as well as the Brahmaputra-Meghna river systems, and necessarily if any initiative is to be taken this must be done by us. It may be recalled that early in January 1939, on behalf of the Government of Bengal, I had the privilege of securing the co-

operation of the Government of U.P. to arrange an Inter-Provincial Flood Conference in Lucknow. This Conference, which was attended duly by the representatives from Bengal, Bihar, U. P. and several Indian States, agreed on principle to the constitution of a Ganges River Commission and also set up an Interim Committee to draw up the details. As a good deal of vested interests had already been created in the canal and electrification schemes in the upper reaches, a considerable amount of opposition was naturally encountered in the initial stages of the discussions. But nevertheless some headway was gained when the majority agreed that all prospective irrigation schemes involving material extraction of river water supplies should be referred to the proposed Ganges River Commission for opinion. When however the Interim Committee submitted its report it appeared that the Chief Engineer of U. P. who happened to be the Chairman objected rather strongly against the same. As this objection virtually signified a clash of interests between the Up-river and Down-river areas, the resulting deadlock could only be resolved at the intervention of the Central Government.

In respect of the Brahmaputra and Meghna rivers, the problem was comparatively simpler, as the provinces concerned had only been Bengal and Assam and there were no serious vested interests in the upper reaches. It must also be said to the credit of Assam and the States concerned, that they took up a very reasonable view of the case from the very start. One should not therefore naturally expect any serious obstacles in setting up the Commission as required by the interests of Bengal in respect of this river system.

But the really serious matter is about the proposed Ganges River Commission, which should have been taken up and pushed with much more vigour and energy. Here the problem is acute, the suffering of the people is very great, and a comprehensive policy for the resuscitation of the dead and dying spill-channels of the Ganges cannot be taken up with any reasonable chance of success, unless and until the up-river areas are prevented from following divergent policies in the matter of extraction of river water supplies and effective control measures are taken up in respect of deforestation in the catchment areas. Here therefore there is a good case for intervention by the Government of India with a

view to set up the much-needed Ganges River Commission, for which requisite authority may be obtained under sections 130-135 of the Government of India Act or under the residuary powers as provided for under section 104. Considering the vast stakes involved and the benefit likely to accrue to millions of people if a major river like the Ganges is satisfactorily controlled and trained, a statutory river commission on the model of the T.V.A. is worth having and fighting for.

Bengal has paid heavily in the past for not presenting her case with vigour, earnestness and in proper time. But in the matter of our life-sustaining rivers, I do not think we can afford to lose our case by default, and the sooner we take it up, the better will it be for all the interests concerned.

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### CHAPTER III

#### DAMODAR—"THE RIVER OF SORROWS"\*

The recent catastrophic floods in the Damodar have once again raised the question that the problems presented by this torrential river should be tackled on a permanent footing, and that the earlier a serious approach is made in this direction the better it is for all the interests concerned. This time the floods also constituted a serious threat to the maintenance of vital arterial lines of communications with the rest of India. The wide devastation and distress in the flood-affected areas coupled with this assumption of military importance naturally calls for emergent steps. But this does not rule out the possibility and desirability of taking up really effective steps as far as human ingenuity and skill could devise. The Damodar floods have left a vast trail of misery and distress in this part of rural Bengal, which has moreover paid rather heavily for steps taken in the past in undue haste and without taking into proper consideration all sides to the question including those of the future. The sad experiences of the past as well as the emergent requirements of the present situation should have induced the Government to take up effective steps on a permanent basis, and not go in for palliatives or stop-gap arrangements once again.

It is of course true that no country in the world has yet been able to prevent the floods of its rivers for all times to come. Even in U.S.A., where there is no dearth of resources or engineering skill, we occasionally hear about devastating floods, creating havoc to cities and the countryside alike. The engineers there, are no doubt doing their best to control the behaviour of the rivers. But if we remember that one of the general causes of floods is deforestation—indiscriminate cutting down of trees and the removal of valuable vegetative cover which prevents soil erosion in the catchment areas—and that this appears to be an inevitable adjunct with modern civilisation which means more and

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\* *Hindusthan Standard*, December 12, 1943.

more growth of cities, we can easily understand how difficult it is to control this wasteful practice. Nevertheless in spite of this general handicap and the occasional outbursts of Nature's fury, the river engineers have been able to evolve satisfactory measures of river control and a reasonable prevention of floods. What is however important for us to note is that scrupulous care is taken by them to avoid the mistakes of past policy, and along with the engineering measures for river control energetic steps are also taken to educate public opinion about the causes of soil erosion and floods and the values of afforestation generally, as they have done in the Tennessey Valley area, U.S.A.

Placed in this background, the recent policy of the Government of Bengal about the erection of a double embankment against the Damodar floods seems to be nothing but the application of a quack remedy. These embankments have worked in Bengal for more than two centuries, and we should realise by now that apart from causing progressive deterioration in the health and productivity of soil previously served by the river spill of the Damodar, these embankments have also interfered with the natural channels of drainage within the embanked areas. Even as against the flood problem, we have the opinion of experts that the embankments by themselves help to aggravate the problem instead of solving them in any way.

"As a direct consequence of embanking these rivers preventing free spill over the countryside," writes an expert, "there was a considerable rise in the flood level soon after these embankments were constructed, and this level is tending to rise higher and higher owing to gradual rise of the river beds, necessitating higher and higher embankments to prevent their overtopping by the floods. Indeed during the Damodar floods of 1935 it was observed that, though the embankment was over 20 ft. higher than the country level at some places, it was about to be overtopped, which could be prevented only by raising the embankment during the progress of the flood."

The evil effects of these embankments have been realised by the Government in passing the Bengal Embankment Act, and there are several instances when portions of the embankments had to be given up to prevent further disastrous

results to follow. Another instance is that of the lowering down of the Gumti embankment some years back which acted as a great moderating influence on the incidence of floods and prevented hardship which would have inevitably followed sudden concentrated discharge of flood water through breaches in the embankments.

The problem of the Damodar engaged the attention of quite a good number of expert Committees and special investigations for near about a century. There was for example the special Committee appointed to investigate the causes of the "Burdwan Fever" as early as 1863 and within recent years there had been detailed investigations by a number of well-trained engineers like Messrs. Adams Williams, Subarwal and E. L. Glass during 1913-20 and by a Delta-Engineer of the reputation of the late Sir William Wilcocks during 1929-30. In this matter of the flood and allied problems of the Damodar, it seems that we have moved much ahead of the stage of controversy and investigations. As a matter of fact when I assumed charge of the Irrigation Department during my ministry, I took up the matter seriously with the engineers and had also valuable consultations during my visits to the Lahore and Poona Hydraulic Research Laboratories. The general consensus of opinion had been that nowhere in the world could floods be prevented altogether. But what the engineers could do was to exert a moderating influence on the virulence of floods through suitable measures of river training and control. All were agreed about the evil effects of embankments as these have been introduced in the Damodar and other river areas of Bengal and the consequent aggravation of the problems of public health, drainage, deterioration in soil fertility, and even of floods for which these embankments were primarily intended.

In framing our schemes for the Damodar, two methods were accordingly considered:

(1) Firstly, there was the question of afforestation in the catchment areas. This would evidently take time and as the areas lie outside the boundaries of Bengal, the matter would require negotiation with the sister province of Bihar. Besides, it was realised that afforestation could not be proceeded with as thoroughly as desirable, in view of the growth of cultivation and town; and it was felt that the soil cover

lost in the hills due to surface erosion caused by rainfall for thousands of years could not be restored easily.

(2) We were therefore induced to take up the second method in right earnest, viz. diversion of the flood water and prevention of its mischief as far as practicable. We had to take full account of the rise of important vested interests behind the "protection" of the embankments such as the Railways, towns etc., as also to provide for flood-flushing the areas with the beneficent silt-laden river water so as to build up soil-fertility, improve public health, and introduce efficient drainage for the countryside. The scheme which eventually took shape and to the main features of which I obtained the approval of the Bengal Assembly in 1940 is known as the Damodar-Hooghly-Howrah Flood-flushing and Irrigation Scheme. This provided for—

(a) Some 372 miles of main and branch canal and 112 miles of distributaries, for flushing and irrigating about 611,000 acres of land in Burdwan, Hooghly and Howrah districts by silt-laden water from the Damodar, drawn through regulated escapes to be built on the embankments. The main canal would follow the alignment of the existing Eden Canal. The old natural channels such as the Gangur, the Behula, Kana Nadi, the Bhallukas and the Kana Damodar would be improved and used as branches. The channels were so designed that no slit would be deposited on them; and minor distributaries with sluices and outlets would be constructed for leading silt and water into the fields.

(b) A Storage Reservoir in the Upper Valleys of the Damodar and a Barrage across the Damodar near Burdwan. As worked out in detail, this Reservoir has a capacity of 6,000 million cubic feet and the dam has been so designed as to permit of its being raised, if necessary, to provide an increase of 30% in storage capacity. Apart from exerting its moderating influence on the violence of the floods in the lower reaches of river during the rains, the storage works were also expected to irrigate some 40,000 acres in the *Rabi* season.

(c) It was estimated that the actual cost of this flushing and irrigation scheme would be about 2.67 crores, and that various indirect charges during the

period of construction and for a certain period thereafter would bring the capital cost to some Rs. 3 crores and 10 lakhs.

Considering the various aspects and the different interests involved in the problem of Damodar floods, it would seem that this scheme satisfies the requirements of the situation as far as practicable. It will also be seen that the scheme makes full provision for the protection of vested interests created by the mistaken embankment policy of the Irrigation Department and at the same time provides for the improvement of the public health and soil fertility of the areas commanded by the Damodar, and for the prevention of violent floods in the near or distant future as far as modern engineering skill permits.

Our idea was to finance the scheme out of a loan; but as the War intervened, we had not time enough to push the loan scheme successfully. But I feel that the Government of Bengal should take up the matter once again and instead of wasting money on further embankments of doubtful value, they may take up the Hooghly-Howrah Flood-flushing Scheme in right earnest. We know that even during this war-time, Bombay, Madras and even Sind have been permitted by the Government of India to float loans of much bigger magnitude for financing irrigation undertakings. The Damodar has moreover assumed military importance now and I think the Government of India will not require much persuasion to agree to a loan for financing the scheme, if of course our engineers can carry conviction with them to the effect that even as an effective and sure measure for moderating the Damodar floods during the next or subsequent rainy seasons, the flood-flushing scheme with its storage works and reservoir is a far better remedy than the double embankment as proposed.

I have come across suggestions in the Press made by eminent scientists and engineers which may broadly be summarised as follows:

- (a) A Commission, presumably of experts, should be appointed to assist the Government in framing a long-term policy towards Damodar ;
- (b) Model experiments should be carried out in the River Physics laboratories ;
- (c) Afforestation in the catchment areas of the



Damodar should be promoted for the prevention of floods.

I am afraid that a further Committee of investigation will simply delay matters, particularly when the department has got a ready scheme in this regard. It may be remembered that precisely for expediting the results of experimenting in laboratories, I took steps to establish a River Training Laboratory in Bengal. This has now taken shape, though in a miniature form ; and evidently we may proceed with our experiments along with the scheme for flood-flushing, which itself is the result of valuable experience in the past and often tested by experiments in laboratories elsewhere. Somewhere a beginning must be made, and it is certainly preferable to start with a more scientific scheme than with embankments and their further complications.

Bengal has waited too long in this matter of the Damodar floods. Now that almost all the necessary spadeworks were completed as early as 1941, I do not see why we should further wait and waste valuable time in further enquiries and investigations or complicate the problem by further embankments.

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## CHAPTER IV

### MAINTENANCE OF CALCUTTA PORT

#### OUR PROBLEM OF RIVERS

In any country rivers play an important part in the health and economic well-being of the people. We in Bengal possess a remarkable system of rivers, on the smooth functioning of which depends the prosperity of our agriculture, building up of public health, maintenance of an essential link of inter-district communications, and in a word the natural prosperity of our villages and towns. In the past we did not pay as much attention to this vital aspect of our national life as was warranted by its importance: on the other hand there had been serious mistakes by causing artificial interference with the smooth functioning of the natural spill channels. All these are good pointers for having a vigorous river policy in the very interest of our future. Indeed there are very few more important tasks ahead of us all than this subject of the resuscitation of our dead and dying rivers and putting new life into our moribund spill-channels.

#### NEED FOR SCIENTIFIC DATA : IMPORTANCE OF THE RIVER RESEARCH INSTITUTE

It is of course for the experts to say how far and in what way we should shape our policy towards the rivers: but I believe, we have had almost all our problems in this regard discussed threadbare by a series of expert Committees and enquiries investigating the question for well over quarter of a century. What the public earnestly desire now is that somewhere and at some stage a beginning must be made, and that when we implement the river or irrigation programmes there must not be any further swerving from the course chalked down. The essential point is that we must have at

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\* *Hindusthan Standard*, October 14, 1947.

our ready disposal the requisite scientific knowledge and an effective organisation to implement the same. There must not be any delay in executing essential betterment programmes: at the same time we must avoid rash or ill thought-out schemes. In other words, we must take full advantage of the River Research Institute established by the Government of Bengal in 1941 and devise schemes after full-scale experiments therein. The present and future behaviour of our rivers needs to be studied if effective schemes are to be devised and put into action and I think I can do no better than to quote from a speech delivered by myself in December 1938 as Minister-in-Charge of Irrigation while putting into shape the scheme for a River Research Institute in Bengal.

“The value of such an irrigation research institute and hydraulic laboratory for a province full of rivers now dried up and dead cannot be overstated. This is an urgent necessity not only for this province but also for other neighbouring provinces of Eastern India. I am glad to say that some neighbouring Provincial Governments are also taking an interest in the matter and are encouraging me in this direction.”

At that time, of course, we had in view the neighbouring provinces of Bihar and Assam. Now that Bengal herself has been partitioned and two new States have emerged out of the same, this River Research Institute should by its experiments and researches prove that rivers after all are no respecters of political boundaries and that the best way of solving the river problems is to have an inter-provincial or inter-State approach to the same.

#### NEW COMPLICATION AS A RESULT OF PARTITION OF BENGAL

It is no doubt true that the problem of river control in Bengal as a whole has been tremendously complicated by the partition of Bengal.

Firstly, there is the problem inherent in a down river area, situated as Bengal is so far as her river systems are concerned. We have to exercise ourselves rather seriously with the canal and deforestation schemes in the upper reaches, say in U.P., Bihar and Assam lest these affect us prejudicially.

Secondly, as a result of partition neither the Pakistan nor

the West Bengal Government would be able to evolve independently of each other a policy for the lower reaches of these rivers as a whole.

There must be some sort of a joint endeavour or approach to the problem if effective results are to be obtained. Yet how far can inter-provincial jealousy or lack of interest stand in the way, is evidenced by the inordinate delay experienced in putting into effect the Damodar Valley Scheme so essential for building up prosperity in West Bengal. In this scheme only two provinces of the Indian Union are interested, and yet when the matter was placed before the Legislature of Bihar a good deal of opposition was voiced on the plea that the scheme was only in Bengal's interest and would not benefit Bihar at all (which is of course far from the truth). However, thanks to the statesmanship and tact of the Hon'ble Mr. Srikrishna Sinha, Premier of Bihar, that scheme ultimately got through the Legislature there and secured its ultimate approval. One can only imagine the fate of similar river schemes running, not through two parts of the Indian Union, but between part of Indian Union and Pakistan with no common platform or allegiance to the same State.

Another legacy of partition is that, so far as West Bengal is concerned, it has been saddled with too small an area and that too disjointed in several directions. In Jalpaiguri and Darjeeling districts there are the upper reaches of the Teesta requiring attention: in the rest of West Bengal province, we have the torrential rivers like the Damodar, the Ajay, the More, the Cossaye and some of the Ganges series in Central Bengal including the tributaries and the spill channels and certain subsidiary tidal channels.

The question is: with this boundary as the background what should be the immediate programme of the West Bengal Government? It has no doubt done well in making a beginning with the Damodar Valley Scheme which would put into effect a much-needed agricultural prosperity in the areas served by the same and would moreover help in rapid industrialisation by its hydro-electric schemes.

#### CALCUTTA PORT

But the next point that calls for immediate attention is the maintenance of the Calcutta Port, and with that end in

view to devise effective measures for keeping the Hooghly river navigable. The Calcutta Port maintains a key position in the whole of Eastern India and for the province of Western Bengal it has become practically our life-line, particularly in its relation to our trade, commerce, industry and agriculture. Utmost efforts should therefore be directed towards maintaining the efficiency of the Port itself as an indispensable adjunct to our economy, and that too immediately.

The deterioration of the Hooghly river is no longer in the realm of controversy, and the major fact which stares the Port of Calcutta in the face is that the river has silted so far within recent years as to prevent heavy draft ships from coming to the port at all. The need for dredging operations was felt as early as 1907 when the Calcutta Port Commissioners introduced a dredging plant, "not with the purpose of maintaining the existing depths but with a view to increase the depth on the upper bars in order to enable the Port to deal with the heavier draught ships which were then coming into vogue"—to quote from an official statement. But the fact remains that these dredging operations could not successfully cope with the increasing deposits of silt, as complaints were increasingly pouring in from the interests concerned and that even as late as 1939 we had serious complaints from shipping agents about suffering inconvenience and financial loss through trading with the Calcutta Port.

It is not intended here to enter into the controversy about the potency of dredging operations for keeping the channel open from the sea to the docks, as this is really a matter for the experts to deal with. Taking however a commonsense view of the situation, it appears that dredging is after all an essentially improvised measure and can hardly be expected to combat with natural forces even for a length of time and the risks are really great if there is a temporary failure of the service, as we know that during the recent Calcutta Port strike we almost reached the danger point of having the Port of Calcutta closed altogether.

#### ACTION OF TIDES

We might refer in passing to a very familiar argument usually put forward that an estuary of the Hooghly type can

be almost indefinitely maintained as a tidal channel, without any flow of upland head-water. We, however, know that from Nadia to Calcutta, the action of the tides is causing a distinct deterioration of the river Hooghly, for the very simple reason that the ebb tide being less strong is unable to scour away the entire silt deposited by the 'flow' tide and that a river channel subject only to the tides tends to silt up in its upper reaches first and the deterioration gradually spreads down through the entire length of the river. Yet this is not a unique experience with the Hooghly. In our own times, we have practically witnessed the rapid deterioration of the "beheaded estuaries" like the Matla, the Thankaran, the Saptamukhi and other rivers, and we should not evidently like this painful history to repeat itself in the case of the Hooghly as well, certainly not for the sake of an experiment.

The inherent weakness and dangers lying behind this line of reasoning was probably responsible for the alternative scheme of the Diamond Harbour Ship Canal, put forth before us towards the end of the War at an estimated cost of Rs. 15 crores on the pre-war price level. It was argued that the estimated cost was worth having on the grounds that the scheme if put through would eliminate the difficulties experienced during navigation in the Hooghly, that it would reduce the annual cost of dredging the river and that finally it would ensure the permanence of the Port of Calcutta by providing a ship canal for all times to come. Yet it was harder to conceive of a more preposterous scheme, if we have in mind the disastrous consequences that are likely to follow in its wake by the virtual abandonment of the Hooghly as a navigable channel and thus bringing about her decay and ultimate death.

#### IMPORTANCE OF THE HOOGLY

The weals and woes of the people of West and Central Bengal are inextricably linked with the smooth functioning of the river Hooghly: on her depend the health, vitality and prosperity of the populace: and lastly, Hooghly provides the only outfall channel for the rivers of Western Bengal, and its abandonment would not only aggravate the flood menace during the rains, but that the whole of the area would as a consequence get water-logged and unproductive.

The Calcutta Port and its interests cannot evidently be thought of and worked out in isolation of the rest of the province, and the main defect of the ship canal scheme was that it concentrated too much of its attention on the Port without taking into consideration the interests of the surrounding areas. The scheme itself would have entailed terrible hardships on the people deprived of their homesteads and agricultural lands, and besides it also involved an expenditure which was much more than the provincial exchequer could bear.

The only feasible and beneficent scheme therefore that comes out is to revitalise the Hooghly by the infusion of fresh upland water from the Ganges and the important point about this is that this should form an essential link in the chain of schemes for revitalising the dead and dying rivers of Central Bengal including all the tidal channels. Says an expert:

“Improvement of the spill channels of Central Bengal and diversion through them of a portion of the Ganges flood appear to be necessary even in the interest of the tidal portion of Central Bengal, as this water after spilling over the land and depositing the silt content will have to pass through these tidal channels for disposal into the sea. With the help of a copious supply of sweet water it will be possible not only to maintain these tidal channels permanently but also to put down the salt water limit and extend cultivation more towards the sea-face even without embankment.”

It is of course not for me to encroach on the realm of experts and detail out a complete scheme in this regard ; but a scheme that takes into account not only the improvement of navigability of the river in the interest of the Calcutta Port but also tends in its train to solve a multiplicity of problems connected with public health, agricultural prosperity, salinity in the river water and a host of other vital aspects concerning the very life of the province is certainly worth serious consideration and striving for.

#### COURSE DIVERTED

The river Hooghly was described as a mighty river flowing past the city, as in the past it was effectually fed with fresh

water from the Ganges through a series of distributaries notably the Bhagirathi, the Jalangi and the Mathabhanga. Through diverse reasons, natural or otherwise, this fresh water supply has been diverted into other courses. The feeder rivers themselves have been silted and dried up and the bed of the river Hooghly is no longer flushed and scoured as effectively as in the past. The main problem for our river engineers is therefore to divert an appreciable portion of the Ganges flood through the three principal spill channels in Central Bengal, viz. the Mathabhanga, the Jalangi and the Bhagirathi, improve the carrying capacities of these channels and provide suitable outlets of distributary channels of adequate capacity, and other facilities for spill over the countryside.

This is indeed a monumental task no doubt, and utmost care will have to be taken at every stage so as to induce the natural forces with as little disturbance as possible and at the same time ensure permanent results. It might probably be necessary that the services of the River Research Institute will have to be requisitioned for this purpose and the entire life-history of these spill channels will have to be recreated in its laboratories.

Life of the Hooghly has to be maintained at any cost if the Port of Calcutta is to survive and all the spill channels of the Ganges in Central Bengal must be revived not merely for the sake of the Hooghly but for the very life and existence of the people in Central Bengal. There must not be any faltering or going back as all the problems are closely inter-linked and no Government worth the name should shirk its responsibility in this vital matter.

#### IMMEDIATE TASK

As I have already stated, the emergence of two States in Bengal as a result of the Radcliffe Award has added a complication into this problem of our rivers. This might even be a blessing in disguise, as in spite of differences in political outlook, both the States would probably have to come forward on a common platform of tackling these rivers, compelled by the sheer forces of nature. If however this co-operation does not materialise in the immediate future, there is practically no reason why we should get disheartened at all.



We must proceed with the task allotted to us and we must not forget that the immediate task ahead of West Bengal is to revitalise the spill channels of the Ganges and to put new life into the streams of the Hooghly.

It is true that we have lost control over the Mathabhangha which has fallen within the area of Eastern Bengal. But the other two feeder rivers, the Bhagirathi and the Jalangi, remain and have probably been allotted to us for the sake of the Calcutta Port and the maintenance of navigability of its channel. We have therefore to concentrate our attention on these two rivers with redoubled energy and must make up for the loss of the other feeder river if a substantial supply of fresh upland water is to be maintained in the Hooghly.

The prosperity of Bengal is inextricably bound up with the fate of her rivers. And any programme of reconstruction will certainly prove futile unless and until this basic factor of revitalising our river systems is taken into account. I believe that the Government of West Bengal are fully alive to this aspect of the question and will not hesitate to take up and fully implement a forward and vigorous river policy. This is the only way of building up the prosperity of our Ports, towns as well as villages.

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## CHAPTER V

### RATIONALE OF FOOD CRISIS\*

The food problem in India as a whole has admittedly reached a stage which may be termed as critical. During the chequered history of British rule in India we have never had any experience of a crisis of this magnitude. Occasionally there had been no doubt famines here and there due to a natural visitation or failure of crops. But these occurred in the 19th century when communications throughout the country were more or less undeveloped and it had been difficult to bring in relief from the surplus areas. But even then the Government had never been slow to devise effective measures ; and thanks to the energetic steps taken by a dutiful Government such distresses were localised and remedial measures adopted with as much expedition as possible. As an outcome of these experiences we have now got an efficient famine code which is considered to be extremely valuable as a guide for measures of relief. Is it not then strange that in this modern age in the middle of the 20th century when the communication systems of the country are well-developed and we have all the blessings of a civilised government, we are in the midst of an acute food crisis, which has moreover assumed the proportions of a famine in certain areas? The Government of the country with all the resources at its command has, up till now, not been able to cope with the problem. The unfortunate part of the affair is that in spite of the working of an " energetic " food policy for more than 1½ years, both on the part of the Central and the Provincial and State Governments, the position is getting worse and worse as days pass on. The question that naturally strikes us is: Is the Government really on the right track in its handling of the delicate food situation? Or is the problem so baffling and its magnitude so stupendous that no normal government can hope to achieve anything like a satisfactory

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solution during an emergency created by the greatest War the world has ever seen?

#### FOOD POLICY IN GREAT BRITAIN

Before we launch on the subject, a brief reference to the experience of other members of the Allied Nations should prove to be instructive, in as much as the need for a satisfactory solution of the food problem was no less urgently felt there, food being considered in the words of President Roosevelt as important as munitions. Right from the beginning of the War, while India simply sat on the fence and watched the situation grow from bad to worse, all these countries adopted effective measures to tackle the food problem both from the long-range as well as short-range points of view. Firstly, steps were taken to improve the production end of the problem of food supply by pursuing a well-planned and scientific agricultural policy and a vigorous "Grow More Food Campaign". In Great Britain for example it was realised from the very beginning that her normal position of depending on foreign countries for 60% of her food portended a grave danger. Consequently her wartime food production drive proceeded along two 'main lines. Firstly, efforts were directed to change the national dietary so as to reduce the consumption of meat, butter and imported fruit, all of which take up considerable shipping space and correspondingly increase the consumption of vegetables and potatoes. This alteration in the national dietaries proceeded in gradual stages and skilful propaganda from the dieticians as well as the B.B.C. was requisitioned for the purpose. Alongside, the entire scheme of rationing which was introduced from January 1940 (within 4 months of the declaration of the War) was so shaped as to compel the people by successive stages to an altered dietary conforming to the wartime exigencies. The stage thus being set for a food production drive, the non-agricultural population was firstly encouraged to grow food on small plots of land called allotments. "So enthusiastically has the call 'Dig for Victory' been accepted," states Sir John Russell, "that much open unused ground in towns and villages, derelict or half-used fields, parks, forecourts and other patches of land have been dug up and made to grow vegetables and potatoes." It has been estimated that in Great Britain today the allotment-

holders and private gardeners between them are producing some £ 10 million to £ 15 million worth of vegetables. Secondly the Government took up an intensification of the farm production, and for this purpose the War Agricultural Committees were set up in each county with extensive powers of controlling the operations of individual farmers, advising them in all matters of agricultural technique and supplying them the necessary machineries and implements. At every stage provision was made to utilise the services of the county agricultural staff and obtain expert help from the advisory scientific staff of chemists, entomologists, plant pathologists, economists and others centred at Universities or large experiment stations. Farmers were encouraged also by a subsidy to plough grass lands. Large scale improvements, particularly drainage and reclamation works were put through, rationing of fertilisers and financial assistance to farmers for increased use of fertilisers were resorted to, and care of the livestock was undertaken. Efforts were made to meet the shortage of agricultural labour and it is interesting to note in this connection that the members of the women's land army employed full time in agriculture rose in 1942 to 53,000 in England and Wales. In other words food policy was organised with all the seriousness of an emergency, in which all the different aspects have been effectively co-ordinated and mobilised for action as in an army division. The success of the policy is easily noticeable in the following brilliant account based on figures furnished in the House of Commons in March 1942:

" In peacetime the U. K. had 13 million acres of arable land and 19 million acres of permanent grass. In March 1942, the figures were reversed and there soon would be 19 million acres of arable land. The additional 6 million acres had gone into a variety of crops: oats had taken about  $1\frac{1}{2}$  million, the wheat acreage had been increased by more than 550,000 acres and the potato crop by more than 300,000 acres over the peacetime acreage of 1.6 million of wheat and 700,000 of potatoes. Vegetables also increased from 2.5 million tons in 1938 to 4 million tons; sugar beet, it was hoped, would be raised by 60,000 acres to the 405,000, which was all the existing factories could cope with " (Sir John Russell in " Britain's Wartime food production drive ").

## FOOD DRIVE IN CHINA AND U. S. A.

The agricultural problems of China are more or less akin to those in existence in our country. In spite of the fact that food situation there has been aggravated by blockade, devastation by invading armies, farm lands lying waste on the fluid war fronts and areas, and large withdrawal of farm labour due to demands of military service, the Chinese Government had been able to keep the food situation well under control even at this seventh year of China's struggle for independence. In her war-time food production drive, Chinese policy proceeded along three main lines. Firstly, there is a group, a few hundred people, of modern trained agricultural scientists and economists who with an enormous amount of self-sacrificing enthusiasm have studied the climate, soil and plants of most agricultural areas. They have developed innumerable varieties of new seeds of rice and wheat and dozens of other plants which will bear richer crops and withstand the rigours of specific local climate and soil conditions better than the seeds traditionally used. They devised modern methods of cultivation and succeeded in introducing them by undertaking patient educational work among the most conservative farmers, facing reactionary landlords and old-fashioned local officials and overcoming their own poor living conditions. As regards rice, improved seeds have been applied in various localities on about 400,000 acres with the result that an additional quantity of 400,000 tons of rice was produced, which works out to be about 15 to 20% more than normally. Similar results were obtained in respect of cotton, oilseeds etc. and the group also introduced successful measures of insect control. The second line of Chinese policy was aimed at finance. The Farmers Bank of China has extended credits to farmers in more than 800 counties. In November, 1942, the loans outstanding amounted to 560,000,000 yuan of which 80% was directly used for the increase of agricultural production and 20% for irrigation, extension and reclamation projects. The third line is taken up by the Ministry of Agriculture and Forestry direct and is confined to various measures which include increase of acreage under rice production, increase of wheat production by winter ploughing, use of improved seeds, use of better fertilisers, reclamation of waste land, control of insect pests and diseases and protection of domestic animals etc.

Amongst the belligerent countries, U. S. A. is foremost in the application of scientific agriculture and her peacetime food economy is that of a comfortable surplus. Even there, the authorities were fully conscious right from the beginning about the possible difficulties that would confront civilian consumption under the pressure of a war economy. The arsenal of democracies took to food production with as much seriousness as it had done in the matter of munitions production and the results shown both by its "Grow More Food Drive" and intensification of farm production furnish another instance of the success that can be achieved by a determined drive and effective co-ordination.

The distribution end of the supply of foodstuffs was also regulated and controlled in every belligerent country. In war-time shortage of food is bound to occur, if not in the case of all foodstuffs, at least in the cases of some. There are usually three alternative ways of dealing with such shortages, viz. (a) by rising prices, which meant that the rich got what they wanted and the poor did not; (b) by fixing maximum prices, which meant queues at the "control" shops, the result being that those who had time rather than money to spare could get what they wanted; and (c) thirdly by rationing, this being the only method which enables a short supply to be fairly distributed at reasonable prices. As an effective control measure and a sure safeguard against the social and economic evils that would follow from shortage of foodstuffs and the serious rise in food prices the third alternative is usually preferred which is the universal practice today. It has already been pointed out how the scheme of rationing in Great Britain was so devised as to introduce in gradual stages a compulsory change in the character of the national dietaries, and to provide a healthy diversion towards the production of more vegetables and potatoes. The rationing scheme of Great Britain was again so framed as to provide for the needs of adequate nutrition for all as also the special needs of the poorer class of citizens. Bread is unrationed and unlimited supply is ensured on the ground that this is the poor man's standby and it was undesirable to impose any restrictions on its use. The January number of the League of Nations Monthly Bulletin of Statistics contains an instructive table on legal food rations in the last quarter of 1942, covering some 25 countries. It points out

that with the exception of only one European country, viz. Portugal, rationing of foods during war-time has become the almost universal experience.

#### CHAOS IN FOOD PRICES IN INDIA

At the end of the fourth year of the War, how do we in India stand today in the adoption of war-time devices for the control and regulation of foodstuffs or in the formulation of a well-planned and well-co-ordinated agricultural policy? Our position is very well reflected in the statistics of prices which reveal practically a chaotic situation as compared with the well-regulated economy of the other members of the Allied Nations. The annual report on currency and finance by the Reserve Bank of India for 1942-43 significantly points out that the rise in wholesale prices is highest in India and least in U. S. A., Canada, Australia and South Africa. As regards food prices, the All-India index numbers upto December 1942 register a rise of 118 points in the case of rice and 132 points in the case of wheat. Since December this relative position of rice and wheat has been reversed, the price of rice registering a specially upward trend in 1943. The index numbers of wholesale prices in Calcutta indicate in the matter of cereals a rise of price of as much as 223 points by May 1943, there being a rise of 100 points in course of one month between April and May last. In Bengal the upward trend of food prices has been particularly pronounced since the beginning of 1943, the rise being as high as 500% in certain cases. Commenting on the situation, the *Economist* of London was constrained to admit that "so critical did the conditions created by high prices and black markets appear that the problem of the cost of living threatened to overshadow the war itself". It is significant to note in this connection that the cost of living in London has risen since October 1938 by only 28%, the increase between 1940 and 1942 amounting to only 8.5%. Even market prices of consumers' goods, exclusive of subsidies but not indirect taxes, were up by only 45% up to the end of 1942 as compared with the basic year 1938. The index of retail food prices as compiled by the Ministry of Labour indicate a rise of only 17% by end of October 1942.

This wide disparity between the rise of prices in this coun-

try and that in the United Kingdom tells its own tale about the effectiveness of the food policy adopted in the two countries. Even within India prices have risen highest in Bengal, this rise being 469% in cereals prices and 300% in prices of pulses in May 1943, while in Bombay, thanks to a better handling of the food situation there, the rise in the all food group prices between August 1939 and March 1943 was limited to only 105%. Another salient feature of war-time food policy in India is therefore that India has practically ceased to be a single economic unit in respect of the course of food prices. Thus in mid-August 1943 rice was selling at Rs. 34 per md. in Bengal, Rs. 20 in Bihar, Rs. 24 in the Punjab, Rs. 19/12 in U. P., Rs. 8/8 in C. P., Madras and Sind and Rs. 11 in Orissa. The price of wheat is similarly Rs. 25 in Bengal, Rs. 12 in Bihar, Rs. 10 in the Punjab and U. P. and Rs. 7/14 in Sind. This chaos in prices really indicates the chaos that exists in the food policies in the country, both in the Centre as well as in the different provinces and states, each pulling in its own way without any forethought, co-ordination or planning.

#### OUR FOOD POSITION

What factors are mainly responsible for this food muddle in war-time? The obvious question that strikes one at the outset is the fundamental one. Is food production in India in normal times adequate for her population? If not, how has that deficiency been met normally and how has the position been aggravated by special factors operating during the War? In this matter as in others a bewildering variety of statistics has been offered from the different sides, and in view of the fact that none can vouchsafe for the entire reliability of the figures, it is difficult to form definite conclusions as a safe guide to policy. Nevertheless certain general trends are observable from the course of agricultural statistics during the last few decades. The first noticeable feature for all-India agriculture has been that while the area under food crops per head of population was actually falling during the last few decades the area under non-food crops (i.e. cash crops and others) was correspondingly rising. This tendency, however faint, has been reflected in the general food position of the country. Up till 1936-37 our position



had been normally self-sufficient in respect of food-supply, though the margin of safety was continuously dwindling. Since 1936-37 an actual food deficit came out on the surface, the deficiency being met from outside, mainly by imports from Burma, Siam and Indo-China. Our statisticians have computed that in India at present there is not enough food for some 48 millions "average" men and that taking the wartime demand for food into consideration this deficiency will actually mount upto 63 million persons. This position however need not cause us any alarm as a good deal of margin is available in this vast country both in respect of intensive as well as extensive cultivation, and during this War countries with far less margin available have been able to solve the wartime food shortage quite effectively. The actual shortage in 1943 in India has been thus explained by Mr. N. R. Sarkar as Food Member to the Government of India in the Central Assembly on 15th February 1943:

"The net gap in our total supply of foodgrains during 1943, after taking into account the increase in our requirement will not exceed 2,000,000 tons, representing a deficit of not more than 4% in our total annual production of principal foodgrains. We must realise that there is no suggestion of a famine in the country but a stringency which, it is hoped, will be temporary in the urban centres of the non-agricultural population."

Hence if we take a commonsense view of this problem of food-shortage, we should realise that the crisis can easily be tided over by a sensible policy of equitable distribution and of increased production of food crops in our farm lands. The Reserve Bank of India in its annual report on Currency and Finance for 1942-43 correctly touches on the right point when it says that

"the problem of food would appear to be not solely one of production but also of maldistribution and to some extent of insufficient co-ordination of Government action."

In this matter again we have got the expert opinion of Mr. H. D. Vigor, the new food adviser to the Government of India, stating in March 1943 that there had been no real deficiency in India as a whole with regard to rice or wheat. The real reason for the present crisis in India is therefore definitely attributable to a defective policy resulting in mal-

distribution and ineffective co-ordination and can thus be properly characterised as that of a food muddle.

#### CENTRAL POLICY OF TRIAL & ERROR

Up till the end of 1942 the wartime food policy in India had been what may be safely termed as one of trial and error. There had been practically interminable discussions between the Centre and the Provinces, and abortive attempts at price control without assuming any corresponding responsibilities, at the end of which a "Basic Plan" was adopted in December 1942. According to this plan the so-called "surplus" provinces would surrender certain undefined quotas of foodgrains to the Central Pool and it would be the duty of the Central Government to procure these quotas for allotment to the "deficit" provinces. In the words of the Government communique, "the Food Department of the Government of India will be responsible for the rationing of the total available pool of resources amongst the different provinces and states. The rationing of the domestic resources of a province or state, as left over after the allotment of quotas, will be the primary responsibility of the respective provincial or state Governments." This plan has worked for near about a year and it is now possible to make certain definite conclusions about the success or otherwise of the working of the same.

The basic plan was defective in one particular from the very beginning, viz. that no decision could be taken, in spite of two All-India Food Conferences, as to how much each surplus province would surrender and how much should each deficit provinces or state receive. As a matter of fact the Food Secretary made the most damaging confession in the July session of the Council of State when he stated that the basic plan did not work properly as the surplus provinces or states were loth to fulfil their obligations to the Central Pool and accordingly the Central Government was unable to supply the requisite amount of foodgrains demanded by the "Deficit" provinces or states. Apart from this initial defect of fixing up the respective quotas, the Central Government also evinced a lamentable lack of firmness and determination in enforcing its basic policy. The constitutional difficulty about enforcing its decision was no doubt there,

but this explanation is obviously not at all satisfactory in these days of national emergency and when there is no dearth of ordinances transcending the spheres of the provinces and states.

Nor did the Centre possess sufficient tact and resourcefulness to persuade the parties concerned to follow its lead with a loyalty and devotion which the present critical situation demands. This is no wonder again, because the tendency at the Centre is still to shift the burden of responsibility on to the poor shoulders of the speculators and profiteers and the defective outlook of the consuming public. Nor are the respective provincial Governments spared. It was indeed a poor show after all when the Food Secretary stated in the Council of State that

“ The Centre could plan, co-ordinate, assist and direct, but the policy has of necessity to depend for execution on the administrations of the provinces or states. It meant that the measures of success of food administration in India depended in the aggregate, and in the ultimate resort, on the efficiency or otherwise of food administration by the provinces or states ”.

This is after all an unedifying spectacle of mutual fault-finding and cannot be justified even as an excuse for the indecision of the Government of India and its continual shifting of position in the face of the slightest opposition from the interested provinces or states. When the Basic Plan did not work properly, the Government of India virtually abdicated its responsibility by declaring “ free trade ” in the so-called Eastern Zone and introducing chaos throughout. It was no doubt intended to be an indirect method of helping Bengal, but practically it worked in the contrary direction by arousing much unmerited suspicion in the neighbouring provinces, who raised bitter opposition in their understandable anxiety to protect their hearth and home. This opposition had its way in the All-India Food Conference held in July last and the Centre had again to abandon free trade and revert to the basic procurement and supply plan.

Our Government at the Centre therefore presents us with the sad spectacle of watching, parleying and waiting in a long-winded fashion, instead of coming to prompt decision in time and executing the same with energy and determination. Another group of difficulties, they say, are those pre-

sented by the transport system which is not available readily for the movement of essential foodstuffs in spite of the priority organisation being in operation. As an instance in point, there is the following illuminating observation during the food debate at the Central Assembly in July last :

“ In recent weeks progress had been made in co-ordinating the work of five different agencies, whose close co-operation was essential for a successful solution of the (transport) problem, viz. the Food Departments of Government of India, the Governments of the surplus provinces, the Governments of the receiving provinces, and the Priority Organisation. ”

Sir Edward Benthall might have mentioned many other agencies and individuals interested in the matter, but this claim of an efficient co-ordination is more than met by a subsequent statement from the Food Member that though wagons full of foodgrains for Bengal were kept ready, these could not be moved owing to the floods in the Damodar and that when a fresh attempt was made to move two ship-loads of foodgrains from Karachi Bengal-bound, these again could not be moved owing to engine troubles! One can readily appreciate the difficulties of transport in war-time, but there is hardly any room for excuses like these to come from men in authority at the Centre.

The ultimate objective of Central planning of food policy has been succinctly stated by Major General Wood as “ Control and control until complete rationing was achieved ”. We have seen that rationing of foodstuffs is an essential war-time device for dealing with shortage and this has been universally accepted. As regards India, it may be remembered that as early as January this year, Mr. N. R. Sarkar as Food Member explained the position as follows :

“ Difficulties of rationing the whole population of India are obvious. The rationing of urban and industrial areas is, however, a more practical problem. ”

On the basis of this the Central Government advised the provincial and state Governments to take preparatory measures for the introduction of rationing schemes in the urban and industrial areas, should they become necessary. It is indeed gratifying to note that rationing is at present in force, as a result of this drive, in Indore, Bangalore City, Bhopal, Quetta, Bombay City and the Suburban District, Cochin,

Travancore and certain of the smaller states. Travancore is perhaps the only state where rationing is in force in rural areas, and it would be interesting to find whether the difficulties that are usually advanced in theory are actually being experienced there in practice. All these experiences should prove to be a valuable guide for the introduction of a full-fledged scheme of rationing throughout India, if not in the case of all foodstuffs, at least in the case of those where acute shortage is being experienced. The drive and initiative should however come from the Central Government, as without an all-India approach to the problem of supplies, no rationing scheme can be successful. It should however be remembered that rationing is an emergency measure, and in this respect as in others during war-time delays are not only harmful but positively dangerous.

#### FOOD CRISIS IN BENGAL

The disastrous position in Bengal at present is a good instance in point, illustrating the dangers and difficulties that are experienced as a result of a defective policy or a policy of masterly inactivity. The rise of food prices here has become phenomenal and unprecedented, the distress among the commoner folks beggars description and the toll of starvation is mounting up daily. In spite of the fact that other provinces and states are marching ahead with their schemes of rationing in urban and industrial areas and some have even taken up rationing in rural areas, we in Bengal are still looking on, trying to fix the blame on the so-called profiteers and black markets, or indulging in a sterile controversy whether the ills of Bengal are not due to "vast exports from the province, vast army purchases and vast denial transactions". It is indeed futile to discuss past misdeeds or acts of folly, but for the evolution of an effective food policy for Bengal, we should apprise ourselves of the special factors operating here which led to continuous deterioration in the food position.

It is clear that the following special factors had been operating in Bengal affecting the food situation:

- (a) Deterioration in the supply-demand position as a result of (i) stoppage of import of rice from Burma, Siam and Indo-China ; (ii) export of foodstuffs to outside and purchases on account of the army and the

denial policy; (iii) increase of population as revealed in the last census ; (iv) influx of evacuees from Burma and elsewhere ; (v) influx of the military ; (vi) influx of war industry labour.

(b) Operation of Government purchasing agents in purchasing foodgrains in the mofussil at fancy prices.

(c) Breakdown of the transport system in respect of civilian needs and the operation of denial policy resulting in removal of country boats from effective service for transport.

A good number of these factors are created by the conditions inherent in the war economy and we shall have to face the food shortage thus created and devise effective measures to cope with the same successfully. The defects of past policy must be rectified and we should see that past policies which resulted in much avoidable hardships are not repeated.

#### A DEFECTIVE POLICY

It is rather unfortunate that the Government of Bengal has up till now failed to obtain a proper perspective of the food situation that confronts us today and that instead of presenting to us any definite scheme of planned production, distribution and prices and co-ordinating the same to the Central food planning, we have been treated with a set of negative measures to deal with the anti-social elements like hoarders and profiteers and of course certain pious hopes for the future. The plans and policy of the Government are evidently limited to the following as would appear from the statement of the Hon'ble Mr. H. S. Suhrawardy:

(a) Utilising the resources of the province to the fullest possible extent:

(b) Liquidating hoarded stocks and stopping black markets and profiteering in the foodstuffs and essential commodities ;

(c) Ruthless confiscation of those who had been defying the law and evading the Food Grains Control Order ;

(d) Equitable distribution of de-hoarded stocks among the rural and urban areas on some definite plans ;

(e) Getting rid of the panic complex with the co-operation of all parties.

In pursuance of this policy and programme, two concrete measures were taken up by the Government, viz. an anti-hoarding drive throughout Bengal in order to unearth the hoarded stocks if any, and the setting up of rural food committees to help in the drive and distribute the de-hoarded stocks. This drive has evidently failed, firstly because all the panicky hoards and surplus foodgrains automatically moved to Calcutta and Howrah (which were mysteriously excluded from the operation of the drive) which became a veritable "Bottomless drain" in the words of the Hon'ble Sir Azizul Huq. Secondly, very little stock remained in the mofussil after the operation of the denial policy and the wholesale purchases by the Government purchasing agents undertaken previously. Hence the only result of the food drive had been to drive out food from the mofussil areas, resulting in widespread misery and distress. Then again as regards distribution of food in the rural areas, Government suggested that food loans should be made by "surplus stockists" to their neighbours in the area or that the regional food committees should undertake to arrange food loans to the needy after obtaining supplies from the prosperous agriculturist or stockist. It is not difficult to foresee the probable results of this policy in the absence of any definite procedure laid down by the Government or any offer by the Government to provide security for these "food loans". It simply gave handle to the mischievous and unscrupulous persons to utilise the power thus given without any corresponding responsibility and proved absolutely abortive like all other paper schemes. A food drive for Calcutta and Howrah was no doubt taken up after the interval of more than a month and unconnected as it is with the general anti-hoarding drive for Bengal, this has evidently become meaningless and purposeless by now. The other aspects of Bengal food policy are mainly directed against the hoarders, profiteers and black-markets and do not call for any serious consideration. These anti-social elements cannot persist, if the wide and unrestricted powers enjoyed under the emergency legislations are fully and properly used, corruption in the Government machinery itself is corrected, and lastly if the Government itself assumes full responsibility and takes up the initiative for the distribution of foodstuffs. The very fact that the Government shirks responsibility in this matter of

food supply acts as an inducement to these anti-social elements and a vicious circle is thus created.

There seems to be no prospect of an improvement either in the recent decision of the Bengal Government to fix up maximum prices for rice and paddy with effect from September 1943. Apart from the fixation of ceiling prices, the policy also envisages certain drastic steps against hoarding and black-marketing, prohibits all exports of rice and paddy from the province and imposes also certain restrictions against inter-district movement of crops without proper permits from the District Officers. There is however nothing in the scheme to show that the Government has accepted the obligation of feeding the people or giving them foodgrains at prices within their means. In the absence of a definite programme for a proper and equitable distribution of the available supplies (the stocks in the Government possession plus supplies from the Government of India and the estimated yield of the *Aus* crop) throughout the province, it is difficult to foresee how there can be any improvement on the existing state of affairs. Dealing with the food position in Bengal in the immediate future, Major General Wood made the following significant observation:

“To turn to the future, the *Aus* crop was beginning to be harvested and would progressively come to the market during September. This rice crop, if shared at 1 lb. per day per head, will provide fully for the rice requirements of the 60 million people of Bengal for upwards of 90 days, if the domestic resources of the province were brought under some form of controlled distribution. In addition, the Government of India under the modified basic plan would reach Bengal, after the requirements of the defence services had been met, 30% of all the rice, 33% all millets, 58% of all wheat and 25% of all gram, which gave an over-all percentage of 36% that Bengal was due to receive during the next few months of all the surpluses and resources that would come into the hands of the Central Government.”

On this showing of the Food Secretary, our immediate prospects no doubt seem to be without any cause for worry or alarm; but everything will depend on the form of “controlled distribution” that takes place in Bengal, about which unfortunately the Government programme is definitely silent.



## RATIONING THE ONLY REMEDY

A scientific food policy during war-time connotes three essential features, viz. planned distribution of the available stocks through a full-fledged scheme of rationing, planning of agricultural production taking both the short-range and long-range points of view and thirdly, planning of prices which must be correlated to the plans for production and distribution. As regards the first requisite, it has been seen that the policy adopted in Bengal so far has been hopelessly inadequate and can in some measure be held responsible for the prevailing distress. The gradual introduction of rationing schemes in the urban and industrial centres of India within the last few months seems to have created practically no impression in the minds of our Government, and the old obsession about the difficulties of rationing seems still to persist. The experience of the "controlled" shops in Calcutta, which have been till now the only evidence of distribution by Government, should tell us that insufficient distribution without taking care to assess the actual requirements of the people of any locality merely adds to distress. As a result of this policy Calcutta has practically been invaded by the destitutes of the neighbouring areas and there had been a wide parade of distress without any proportionate relief to the people concerned. This method of "controlled distribution" must therefore be given up in the interest of a scientific food policy, and in its place a full-fledged rationing scheme will have to be adopted. As recommended by the All-India Food Conference in July last, we may make a beginning in this direction in the bigger cities and industrial areas. A good deal of problems will no doubt crop up, the administrative question, vastness of the area and number of population involved, the difficulty of ensuring a continuous and adequate supply, illiteracy and other questions. But these must be squarely and boldly faced, and as a matter of fact we have the expert opinion of Mr. W. H. Kerby, Rationing Adviser to the Government of India, that if a decisive and firm policy is followed, backed up with necessary legal instruments and an adequate enforcement organisation, there is no reason why an efficient individual card rationing scheme for foodstuffs should not be a success in the urban areas of India. As we gather experience, the benefit of the scheme may gradually be extended to the rural areas as well. As regards

machinery, Government may use its own for the purpose or encourage Co-operative Stores all over the province, or work through licensed traders and large industrial establishments and the establishments of the landholders or utilise a combination of all or some of the agencies mentioned. Whatever may be the machinery, the supreme need of the hour is that Government must inspire public confidence and enthusiasm by assuming full responsibility for distribution of foodstuffs through rationing. This is indeed the surest and the only way of cutting through the vicious spiral of the food crisis through which this Government is endlessly moving due to their defective outlook and folly.

As regards the second requisite of a planned supply of foodstuffs, there are evidently two aspects to be considered, viz. procurement of supplies from abroad and agricultural production. As we have already seen, the procurement of supplies from outside depends on an efficient working of the basic plan of the Central Government and the pressure that we from Bengal can put forth at the Centre. If the Government of Bengal is made open to the charge of building up a huge profit for its purchasing firm by selling Punjab wheat at a much higher price in Bengal (an accusation made by the Punjab Government spokesman at the July Food Conference), our case is naturally prejudiced and a very dangerous bias is created against the working of the basic plan in favour of Bengal. Then again the absence of any satisfactory scheme of distribution of foodstuffs weakens our case. If our house is set in order and rationing is introduced, our claim will be irresistible not only at the Central Pool, but also to the members of the Allied Nations to whom appeals have been made. India supplied food to other War Zones at great sacrifice, and there seems to be no reason why at this Eastern Zone of the theatre of War, the Allied Nations should not feel a special responsibility and supply food to keep up civilian morale. There seems to be favourable moves in this direction already and there is a suggestion to release a portion of the International Wheat Pool in Canada for the people of India. According to experts, surplus shipping is now available to the Allies and the U-Boat menace has also disappeared along the allied convoy route from Gibraltar to Suez.

## GROW MORE FOOD DRIVE IN BENGAL

As regards the supply end of food planning, however, the real and ultimate solution lies in an intensification of the Grow More Food Drive and scientific agricultural production. The initiative in this matter has been taken by the Central Government and it appears that up till now more reliance has been placed on propaganda and appeals and no tangible steps have been taken to supply the actual requirements of the tiller of the soil on the lines of a similar policy adopted in Great Britain. As has been the experience in other belligerent countries, the war-time food production drive must be practical, imbued with a real spirit of help to the growers of food and in respect of increased farm production it must take into view all the sides of agriculture including that of finance. Propaganda and appeals will certainly be there, but in order to be effective this must be accompanied by a constructive policy of help and guidance. In this context the following points need recapitulation:

(a) Adequate provision for supplying credit to the agriculturists. This may be encouraged through the existing banking agencies, Co-operative Societies, Co-operative Land Mortgage Banks or direct through Government agencies. The Agricultural Credit Department of the Reserve Bank of India should prove to be an ideal nucleus in this matter, but unfortunately it is rather inactive.

(b) Free supply of improved seeds and seedling. Central policy has made some provision in this matter. It appears however that the important process of vernalisation has been overlooked. Accelerating production by the process of vernalisation is one of the miracles created in Soviet Russia and might have been tried by our experts by demonstration and careful propaganda.

(c) Encouragement of compost manuring and supply of manures as far as possible.

(d) Encouragement of more vegetable production on all spare strips of land, particularly in the vicinity of urban areas by offering such concessions as supply of water, free distribution of vegetable seeds, manures etc.

(e) A move to bring waste lands under cultivation by arranging for supply of water, provision of manures, agricultural loans and the removal of insanitary conditions.

These points are by no means exhaustive and it should be borne in mind that the different departments of the Government of Bengal have been trying to improve farm production from various angles during the last few decades with varying measures of success. But the problem now is how to galvanise this peace-time agricultural policy into a much speedier war-time activity. It is doubtful whether effective results can be obtained by appointing a special officer here and another there. The need is that of an effective war-time co-ordination and that can only be achieved if a special Farm Board is created, saddled with sole responsibility of a Grow More Food Campaign and increased farm production. A definite periodic programme, with specific results to be attained during the period, will have to be framed and the Board must be made responsible to achieve the results so specified.

Whilst on this subject of a Grow More Food Drive, the recent decision of the Government of Bengal to take up certain small irrigation schemes on the advice of Sir William Stampe, Irrigation Adviser to the Government of India, may be briefly mentioned. It is reported that the Central Government has agreed to finance the scheme to the extent of Rs. 30 lakhs provided the Bengal Government also agrees to spend a similar amount. In the absence of any details of the scheme, it is difficult to form any judgment about the merits of the proposal or say how far and to what extent the scheme would meet the special requirements of Bengal for bringing fallow lands under cultivation. In this connection I am rather glad to note that the Government of Bengal has revived the smaller schemes of irrigation and drainage improvements initiated by me during my term of office, and the District Officers have been authorised to spend up to Rs. 10,000 in this behalf for each district. But the danger in respect of both these schemes is that in the absence of a special Farm Board and a definite relation to a planned programme of increased farm production, enthusiasm may flag in the long run and the scheme may miscarry. It is for this purpose that a Farm Board with a continuous war-time responsibility should be made to function.

Planned prices form the third feature of war-time food planning and as it has already been stated this forms an integral part of the plans for production and distribution. The fixing of ceiling prices has already been taken up by the

Government of Bengal, but the policy can be successful only when complete rationing is introduced in the urban centres of the province. In this connection we cannot of course overlook the part played by monetary inflation in this disastrous upward trend of the course of prices specially in the case of foodstuffs. In spite of the deflationary measures adopted by Central Government, it is doubtful whether at this late stage inflation is at all capable of being controlled in any effective manner. The *Economist* of London rightly points out that

“ While the financial agreement between India and Britain continued to pour new currency into India, the Indian Government is attempting to order the tide back like King Canute.”

This being the prospect of deflation, the only direction in which Bengal can look for relief out of the soaring prices and the food muddle is a full-fledged scheme of rationing in respect of the distribution of the available stocks, coupled with a strenuous endeavour to improve the food position by procurement of additional supplies from the All-India Pool and abroad and the adoption of a Grow More Food Drive with all the seriousness which the present emergency demands. The problem must be faced squarely if the people of Bengal are to be saved from hunger and starvation which have already made their grim appearance, and all the social and political evils that follow from them.

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## CHAPTER VI

### PRODUCE OR PERISH\*

Since the termination of the War the problem of food supply has engaged the anxious consideration of thinking people in almost all countries of the world. There is an acute food shortage everywhere, and the main reason for this will no doubt have to be found in the wide-spread destruction, devastation and general unsettlement caused by the War itself. But there are also much more fundamental forces in operation, resulting in this general uncertainty and the dislocation of living conditions. As a well-known publicist tells us, the world's population is today 8% larger than it was before the war while the world's total production is more than 6% below the pre-war level. Coming nearer home, we know that India also had her share in this general dislocation of life caused by the War and all its accompanying evils. We also know that while our population goes on climbing steadily at the rate of 1.2% every year, our food production actually indicates a declining rate, the adverse balance being met by precarious imports from abroad. Available statistics for the last few years tend to show that though imports from abroad had become available to us in quantities exceeding pre-war average figures, the yield of crops in India itself suffered to an unusual extent for two successive years due to adverse seasonal conditions. This will be seen from the following figures:

YIELD OF CEREALS  
(All-India figures in lakhs of tons).

| Average<br>5 years<br>ending | Rice | Wheat | Jowar & Bajra | Total<br>(Four<br>cereals) | Difference<br>from<br>average. |
|------------------------------|------|-------|---------------|----------------------------|--------------------------------|
| 1943-44                      | 282  | 106   | 112           | 500                        | ...                            |
| 1944-45                      | 301  | 108   | 109           | 518                        | + 18                           |
| 1945-46                      | 284  | 92    | 88            | 464                        | - 36                           |
| 1946-47                      | 302  | 81    | 85            | 468                        | - 32                           |

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\**Modern Review*, April 1948.

These figures no doubt indicate an exceptional shortage in our food production, and one should not wonder that the organisation for internal procurement of foodgrains experienced a rather unusual strain within recent times. Then again when India looked abroad for the procurement of foodgrains, it was found that the allocation of foodgrains by international bodies have fallen far short of the minimum needed to maintain even a 12 oz. ration throughout the country. Over and above this, these food imports had to be obtained at unreasonably high prices, causing an abnormal strain on the country's limited foreign exchange resources and involving heavy expenditure on food subsidies.

It is true that it is not for the beggar also to play the part of a chooser. But if we recall how India responded generously to the grim needs of the United Nations during the War, and ungrudgingly opened her granaries for their use, we might have reasonably enough put forward a claim for a much better treatment in this matter of food supplies. However, the essential lesson that comes out of this food-import-episode should not be lost on us. For her very existence, India must concentrate with an iron determination on the production of food requirements, all by herself, so that the goal of self-sufficiency is reached as early as possible. There is a smug self-complacency in some quarters that we have after all the food rationing system which would any how solve all our problems in this regard. But we shall have to remember that rationing is only a means to an end, an emergency measure to tide over a temporary crisis. Moreover, rationing involves a privation and sacrifice on the part of the individual, which can only be worthwhile if forces are set in motion enabling the nation to do away with this self-imposed curtailment of the freedom of choice. Hence the very imposition of a rationing system also implies that the Government must have a well-thought-out long-term plan for speeding up food production and an immediate programme of a production drive.

It is rather distressing to note that in the past the Government of the country did not take up quite seriously this constructive aspect of food policy. And this lack of seriousness is now reflected in the fact that so far as food production is concerned all the available statistics indicate a much worse position today. The Grow More Food Cam-

paign undertaken by all the Provincial Governments on the initiative of the Government at the Centre proved to be more or less a fiasco.

With the dawn of freedom, our problems have also multiplied. Apart from the fact that there is a tendency in our country for the growth of population to outrun the increase of food supply, there had been a tremendous problem of congestion of population in different localities, due to vast migrations of refugees from Pakistan and other affected areas. Then again, thanks to the Partition of India, a good portion of fertile and well-irrigated tracts of land have passed away from our hands. In Bengal, for example, we know that our position as regards food production has been dangerously affected due to the major paddy-growing areas being made over to Eastern Bengal. In short, as a result of partition there is now the sad legacy of less food but more to be fed. And the problem further multiplies as there is a steady influx of refugees from Eastern Pakistan as also Western Pakistan. The essential point, therefore, is that we must now have a vigorous policy of increased food production, and that this must be planned and geared up in such a manner as to make it adjustable to the consumption requirements of our increasing population, leaving at the same time a comfortable margin for the displaced millions seeking refuge in the territories of the Indian Union. It is not sufficient to provide relief to the refugees ; nor is it sufficient to provide alone for their rehabilitation and resettlement. The essential test of our competence to handle this colossal problem, so far of course as the economic implications are concerned, is to find a permanent solution of their food problem on a satisfactory basis.

Having due regard to the existing background of the Indian scene, the sentiments expressed by Pandit Nehru in his recent broadcast speech on the production crisis acquires a rather grim significance:—

“ We talk of freedom, but today that political freedom does not take us far, unless there is economic freedom. Today, we have, in addition, to face tremendous problems of vast migration and large colossal number of refugees. They are not incapable of producing, but circumstances have forced them into this unhappy position. So we have to think of production



as an urgent problem even more than what we have otherwise done."

We must realise by now that there is no longer any room for handling the food situation in a complacent or long-winded fashion, usual with the previous Government. It is refreshing to note that some of the Provincial Governments are showing signs of a new responsibility in this regard, and that at least one of them has come forward with a Grow More Food Drive with definite targets and a time-schedule to realise estimated increases in the production of cereals. But the main fact is that we must not repeat the mistakes of the past or make a defective approach to the problem in the absence of reliable data. In Bengal, for example, the root cause of agricultural deterioration was never gone into, or taken into serious account in any programme connected with the Grow More Food Drive. Yet a commonsense view of the situation is that any such scheme is sure to come to grief unless the basic factor of the deterioration of our river systems and the absence of irrigation facilities is duly considered and provided for. In Bengal, even the few earlier canals that were taken up, were not irrigation canals proper, but were undertaken either for navigation purposes or simply to combat famine and thereby provide relief to the famine-stricken people. It may seem strange, but it is true to say that the only canal made for irrigation purposes was in respect of the Damodar, and that even here a faulty approach to the problem of canal rates as also a faulty execution of the canal works robbed this beneficent measure of much of its value.

If, therefore, we are to ensure success for the Grow More Food Drive in Bengal, we must go into the root cause of agricultural deterioration and take up at the same time a matter-of-fact and practical view of the situation. Our immediate task in this respect should be to collect the data of:—

1. Available cultivable land not under cultivation ;
2. Lands not under cultivation but which can be made cultivable ;
3. Lands which can not be improved ;
4. Lands where there are actual facilities of irrigation ;
5. Lands other than food crops grown, but which can be converted into food-crop growing areas; and
6. Areas specially suitable for intensive cultivation.

Due care must be taken to ensure accurate statistics made afresh by proper experts to avoid the unfortunate consequences of ill-founded statistical data of the production per acre leading to the last Bengal famine and the unpleasant happenings of the recent jute forecast.

To draw up a bold and definite programme for increased production the cultivators of the Province are found faced with an array of difficulties. Apart from usual primitive and outmoded habits of life, they suffer from all kinds of handicaps in respect of suitable irrigation facilities, supply of manures and fertilisers, adequate marketing facilities etc. In Bengal, large areas produce only one crop and this is due to the conservative habits of the people as also to absence of irrigation facilities and consequent deterioration in soil fertility. Of late, in Bengal, the average rain-fall has also deteriorated due to ruthless deforestation specially during the last War and so some means of irrigation other than depending on rain-fall have become much more indispensable.

There are various methods of irrigation practice in Bengal, e.g.,

1. Artificial irrigation by drawing water from "Beels" and other water sources by improvised methods,
2. Well irrigation for a limited area,
3. Tank irrigation from tanks.

Unfortunately, however, all old irrigation wells and tanks in Bengal have deteriorated as they have not been improved in proper time and the Tank Improvement Bill with all its promises lost its efficacy on the people as it was not taken up seriously. The Damodar Canal has, however, all along been helpful in irrigating the areas lying within its ambit to a great extent and its utility has been very much appreciated of late by the public in the years of continued draught. It is, however, refreshing to note that there is now an overwhelming general demand for its extension and an amicable settlement regarding the rate has also been reached between the Government and the public which, I hope, will help the people of other areas to appreciate the manifold benefits of canals. In the Punjab where rain-fall is scarce and capricious and people do not depend on it, canal irrigation has been very much successful in the resulting rise of the stand-

ard of living of the people and in the indirect returns to the State by fetching a very decent income from irrigation. In the U. P. the portion which adopted canal irrigation has proved eminently successful. I had the special opportunity of studying at first-hand myself the canal systems of Mysore executed on scientific lines where they have proved a great boon to the cultivators for they do not know what is failure of crops. There are other portions of the State where the construction of permanent canals has proved to be the only safe and reliable system to get a sure production. It is a welcome feature that the Government of West Bengal budgeted this year for 86 lakhs of rupees for several irrigation projects in agricultural areas including re-excavation of irrigation tanks. The multipurpose scheme in respect of the Damodar Valley has already been taken up and I am glad to learn that the first sod in respect of the Mor Scheme has also been cut by the Hon'ble Minister-in-Charge. This would introduce a much-needed agricultural prosperity in an area neglected in the past and one can easily hope that the Dwarakeswar Project will also be taken up as early as possible so as to complete the picture in this area.

To assist in increased production, the district agricultural farms should rise up to the situation and give the cultivators proper training how to grow more food with minimum cost by improved appliances. The efforts of the Government to start an Agricultural College in West Bengal to secure requisite trained staff for improved agricultural activities at the cost of 2 lakhs of rupees is a move in the right direction. Again, adequate provision must be made for the regular supply of artificial manures and improved fertilisers. The measures so far adopted in the form of compost and other varieties to improve the fertility of the soil failed to achieve the desired purpose for its want of popularising the same. It is really unfortunate that for absence of any fertiliser or manures some lands have got to be kept fallow which means less production. So vigorous efforts must be made immediately to supply better manures to improve the yield per acre. With improved production, facilities for marketing will have to be arranged to ensure better returns to the peasants direct and provisions should be made for the improvement of roads for inter-linking the paddy-growing areas with the market.

Along with the Grow More Food Drive the growing of vegetables should receive equal attention and encouragement and the plots of land suitable for such purposes and lying within reasonable distance from the market should be used for growing vegetables. Adequate propaganda work should be made in the direction and if the means of transport be improved vegetable growing may be encouraged in the interior and people will then have a natural inducement for it.

In short, for the increased production of agricultural lands in West Bengal there must be an all-out drive for improving the river system, increasing the number of canals in suitable areas and for small areas improvement of tanks as well. With the availability of cheap electricity in future as a result of the adoption of hydro-electric schemes, tube well irrigation may be introduced in suitable cases for limited areas. But canal irrigation represents by far the most regular, well-defined and controlled system of irrigation, for besides helping intensive cultivation on suitable areas, canals will not only be able to irrigate during the rainy season but also in the winter help growing winter crop and other suitable crop according to the suitability of the land.

The food problem is one of the most vital problems with us today. The people of West Bengal live in a state of starvation and they are diminishing every day in vitality and potentiality. There is urgent need for them to lead a healthy normal life and unless they have a secure and solid food front to get nursed back to physical fitness, they cannot evidently be expected to play the vigorous rôle of a free citizen in an Independent India. Produce or Perish!

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